

What are Percentiles?

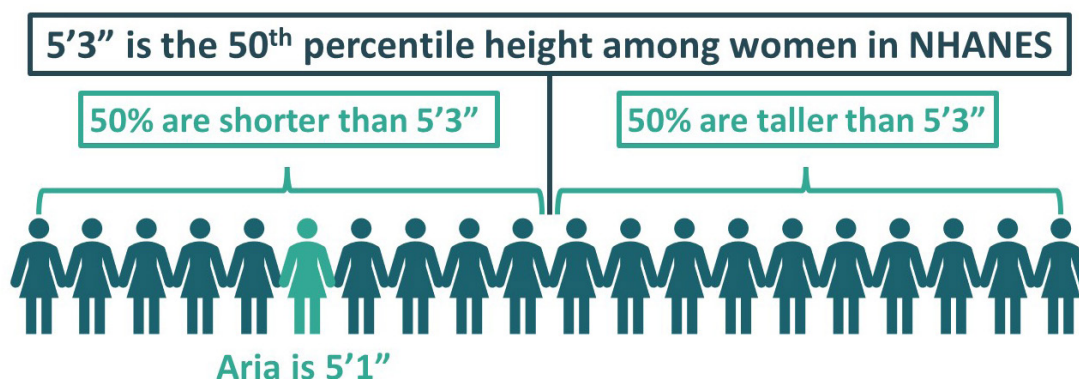
The Michigan Chemical Exposure Monitoring (MiChEM) project uses percentiles to compare a lab result from one person to the lab results of a group of people. For the MiChEM project, a person's lab results are compared to the 50th percentile and 95th percentile of the group results.

- The **50th percentile** is the result that 50% of results are below and 50% of results are above.
- The **95th percentile** is the result that 95% of results are below and 5% of results are above.

AN EXAMPLE OF HOW THE 50TH AND 95TH PERCENTILES CAN BE USED

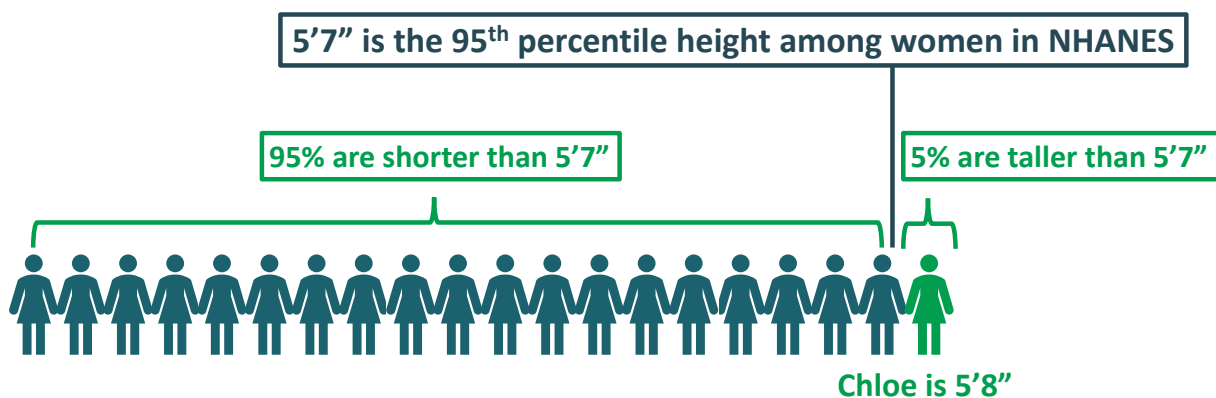
In **Figure 1**, Aria's height is compared to the heights of women who joined the National Health and Nutrition Examination Survey (NHANES). Aria is 5'1" and is below the 50th percentile. This means she is *shorter than at least 50%* of the other women who took part in NHANES.

Figure 1. Illustration of 50th Percentile



In **Figure 2**, Chloe's height is compared to heights of women who joined NHANES. Chloe is 5'8" and is above the 95th percentile for height. This means she is *taller than at least 95%* of other women who took part in NHANES.

Figure 2. Illustration of 95th Percentile



HOW ARE PERCENTILES USED IN MiChEM?

The MiChEM project provides the 50th percentile and the 95th percentile values for amounts of chemicals in people 20 years of age or older from across the country who took part in the NHANES, if available. By comparing your lab results to the results of NHANES participants, you can see how they compare to the people from the rest of the U.S.

- NHANES is a major program of the U.S. Centers for Disease Control and Prevention (CDC) that produces important information about exposures to certain chemicals.
- NHANES measures the amount of chemicals in the blood and urine of people across the U.S. MiChEM is measuring many of those same chemicals among people in Michigan.
- The NHANES data come from the CDC National Report on Human Exposure to Environmental Chemicals, available at [cdc.gov/exposurereport](https://www.cdc.gov/exposurereport).
- We are providing the most recently available NHANES data for comparison. NHANES will continue to collect new data during the MiChEM project. This means that later MiChEM participants may have different NHANES percentiles provided in their results booklet depending on when their lab results are provided.

ONLY A POPULATION COMPARISON

It is important to point out that percentiles are only used for comparing your lab results to the results of other people.

- Comparing your lab results to the 50th or 95th percentiles from NHANES only tells you how many people have results like yours.
- Percentiles alone do not tell you if your lab result is “good” or “bad.” Most people are likely to have some amount of chemicals in their blood or urine.

If your lab result is less than the NHANES 95th percentile, the amount of that chemical in your blood or urine is equal to or less than 95% of U.S. adults. A lab result higher than the NHANES 95th percentile means that the amount of that chemical in your blood or urine is higher than most U.S. adults.

WANT MORE INFORMATION?

For more information about your lab results or ways to reduce your exposure to chemicals, call us at 844-464-7327 or email us at MDHHS-michem@michigan.gov with questions. Our project team will contact you. You can also visit our website at Michigan.gov/DEHbio and click on “MiChEM.”

The Michigan Department of Health and Human Services (MDHHS) does not discriminate against any individual or group on the basis of race, national origin, color, sex, disability, religion, age, height, weight, familial status, partisan considerations, or genetic information. Sex-based discrimination includes, but is not limited to, discrimination based on sexual orientation, gender identity, gender expression, sex characteristics, and pregnancy.

