



STATE OF MICHIGAN

DEPARTMENT OF HEALTH AND HUMAN SERVICES
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Change in Reference Ranges for Congenital Adrenal Hyperplasia Screening

The Michigan Department of Health and Human Services Newborn Screening (NBS) Program recently reviewed ten years of screening data for congenital adrenal hyperplasia (CAH). Working with Michigan’s Pediatric Endocrine Advisory Council for input and guidance, NBS Program staff determined that reference range changes were needed to improve the detection of CAH cases, particularly among normal birth weight infants with CAH. Additional reference ranges based on birth weight increases the sensitivity of screening for CAH and reduces the likelihood that infants with CAH will have normal screening results (i.e., false negative).

Effective October 25, 2021, the reference ranges for 17-hydroxyprogesterone (17-OHP) will be adjusted from three reference ranges based on age at time of collection and birth weight to seven reference ranges. These new screening reference ranges better balance identifying newborns with CAH while minimizing false positives. The updated reference ranges are summarized in the table below. All units for 17-OHP are ng/mL. As a reminder, NBS specimens should be collected between 24-36 hours unless hospital transfer or blood transfusion occurs prior to 24 hours.

Birth Weight (Age at Time of Collection)	Borderline Positive Screening Result for 17-OHP	Strong Positive Screening Result for 17-OHP
<1000 grams (any collection age)	200	220
1000-1499 grams (any collection age)	125	175
1500-1999 grams (>12 hours)	90	110
2000-2499 grams (>12 hours)	65	110
2500-2999 grams (>12 hours)	55	110
≥3000 grams (>12 hours)	40	70
≥1500 grams (≤12 hours)	100	150

These reference range changes are anticipated to result in a similar total number of positive screens for CAH. However, the majority of positive screens for CAH will shift from low birth weight infants to normal birth weight infants. Due to this shift, neonatal intensive care units will likely see a decrease in positive screens for CAH. Primary care providers may notice a small increase in positive screens for CAH. In the event of a positive screen for CAH, providers will receive additional information on the next steps from the Pediatric Endocrine Newborn Screening Coordinating Center at Michigan Medicine.

For questions or comments on this change, please contact the Newborn Screening Program via email at newbornscreening@michigan.gov or via phone at 517-335-4181.

Sincerely,

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