



MEMORANDUM

DATE: March 18, 2026

TO: South Carolina Newborn Screening Community

FROM: Jenny Meredith, Ph.D., HCLD(ABB) *JM*
SC DPH Public Health Laboratory (PHL) Director

SUBJECT: South Carolina (SC) Newborn Screening (NBS) Program's Revised Expected Range

Effective March 18, 2026, the SC Newborn Screening Laboratory is updating the expected ranges for three acylcarnitine analytes: **C3**, **C18** and **C3DC+C4OH**. These analytes are used in newborn screening as primary and/or secondary markers for organic acid and fatty acid oxidation disorders. For **C3** and **C18**, the lower limits of the expected ranges are being revised. These lower limits are used exclusively as secondary markers for fatty acid oxidation disorders. For **C3DC+C4OH**, the upper limit of the expected range is being revised. This upper limit is used as a primary marker for organic acid and fatty acid oxidation disorders. The current and revised expected ranges are provided below in Table 1.

Table 1. Revised analyte expected ranges.

Analyte	Current Expected Range (μmol/L)	New Expected Range (μmol/L)
C3 (Propionyl carnitine)	> 0.15	> 0.41
C18 (Octadecanoyl carnitine)	> 0.30	> 0.48
C3DC (Malonyl carnitine) + C4OH (3-Hydroxy-butyryl carnitine)	< 0.40	< 0.55

This change is part of the SC NBS Program's commitment to continuous improvement. The SC NBS Program monitors test results and determines if adjustments are needed based on population studies.

Please direct any questions to Beth Bair, M.S., Ph.D., Newborn Screening Section Director at bairea@dph.sc.gov; 803-896-0991.