Newborn Screening ACT Sheet
[Absent/ Reduced Biotinidase Activity]
Biotinidase Deficiency

Differential Diagnosis: Biotinidase deficiency (complete and partial); see C5-OH acylcarnitine for non-biotinidase associated conditions.

Condition Description: A multiple carboxylase deficiency resulting from a reduction in available biotin secondary to deficient activity of the biotinidase enzyme.

YOU SHOULD TAKE THE FOLLOWING ACTIONS:

- Contact family to inform them of the newborn screening result and ascertain clinical status.
- Evaluate infant if poor feeding, lethargy, or hypotonia are present.
- Consultation/referral to a metabolic specialist to determine appropriate follow-up.
- Undertake confirmatory testing in consultation with a metabolic specialist.
- Emergency treatment if symptomatic.
- Report findings to newborn screening program

Diagnostic Evaluation: Enzyme assay for biotinidase in serum or plasma reveals low activity. False positive findings are usually a processing/shipping problem. Urine organic acid analysis may show normal or increased 3-hydroxyisovaleric acid and 3-methylcrotonylglycine. Plasma acylcarnitine analysis may show normal or increased C5-OH acylcarnitine.

Clinical Considerations: The neonate is usually asymptomatic but episodic hypoglycemia, lethargy, hypotonia, and mild developmental delay can occur at any time from the neonatal period through childhood. Untreated biotinidase deficiency leads to developmental delay, seizures, alopecia, and hearing deficits. Biotin treatment is available and highly effective.

Additional Information:

Gene Reviews
OMIM
Genetics Home Reference

Referral (local, state, regional and national):

Testing
Clinical Services
Find Genetic Services

LOCAL RESOURCES: Insert State newborn screening program web site links

State Resource site *(insert state newborn screening program website information)*

Name	
URL	
Comments	

Local Resource Site *(insert local and regional newborn screening website information)*

Name	
URL	
Comments	

APPENDIX: Resources with Full URL Addresses

Additional Information:

Gene Reviews
http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=gene&part=biotin

OMIM
http://www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=253260

Genetics Home Reference
http://ghr.nlm.nih.gov/condition=biotinidasedeficiency

***Referral** (local, state, regional and national):*

Testing
http://www.ncbi.nlm.nih.gov/sites/GeneTests/lab/clinical_disease_id/22179?db=genetests&country=United%20States

Clinical Services
http://www.ncbi.nlm.nih.gov/sites/genetests/clinic?db=genetests

Find Genetic Services
http://www.acmg.net/GIS/Disclaimer.aspx