GEN-2-043 Attachment I- AfpTest (for ONTDs) Instruction Manual

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<th>Type of document</th>
<th>NTD Labs SOP ID</th>
<th>Division</th>
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<td>1-D Clinical Diagnostics Services</td>
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<th>Business Line(s) / Unit(s)</th>
<th>Status</th>
<th>Periodic Review Date</th>
<th>Functional Area</th>
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Written by: Elizabeth Sylander

Functional Document Owner: Eurofins D CDS US Quality Management Department; Eurofins D CDS US Laboratory Management; Eurofins D CDS US Quality Control Department

Review and Approval:
- Reviewers: Stephanie Zichi; Margaret Palladino; David Krantz; Norman Moore; Lisa Schmitt; Jonathan Hayden
- Approver (Laboratory Director Only): Terrence Hallahan

Reason for Revision: Remove specimen collection section

Revision Log

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<th>Date</th>
<th>Rev.</th>
<th>Author</th>
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<td>May 18, 2018</td>
<td>1</td>
<td>Eurofins D CDS US Quality Management Department; Eurofins D CDS US Laboratory Management; Eurofins D CDS US Quality Control Department</td>
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Electronic Signatures

Jonathan Hayden;Review;Jul 6, 2018 4:59 PM EDT
Stephanie Zichi;Review;Jul 9, 2018 10:06 AM EDT
Margaret Palladino;Review;Jul 9, 2018 11:29 AM EDT
David Krantz;Review;Jul 10, 2018 10:28 AM EDT
Lisa Schmitt;Review;Jul 11, 2018 10:32 AM EDT
Norman Moore;Review;Jul 11, 2018 1:47 PM EDT
Terrence Hallahan;Approval;Jul 18, 2018 9:53 AM EDT
Reporting Title: AFP Test for ONTDs
Test Definition: SECTRIAFP
Testing Location: Melville, NY
Reporting Location: Melville, NY

Description:
Alpha-fetoprotein (AFP) values are compared to the median value of the unaffected population at a given gestational age and the multiple of the median (MoM) is obtained and classified as either Within Range, Borderline elevated or significantly elevated. In addition, risks for open spina bifida, anencephaly, and ventral wall defects are provided.

Analytical Method(s):
Serum Specimens: AFP is measured on the AutoDELFIA machine using PerkinElmer’s solid phase 2-site sandwich fluorometric assay (product number: PKI B079-201).

Dried Blood Specimens: AFP is measured on the AutoDELFIA machine using a lab developed solid phase 2-site sandwich fluorometric assay.

Specimen Requirements:
Specimen Type: Serum

- Container/Tube: Red-top Vacutainer® tube or Serum Separator Tube (Red/Grey or Gold Top SST)
- Specimen Volume: 0.5 ml of spun serum or 5 ml of unspun whole blood
- Specimen Stability: Serum samples are stable at ambient temperature for 6 days.
- Specimen Rejection Criteria: hemolysis, lipemia, incorrect tube type

Specimen Type: Dried Blood

- Container/Tube: Dried Blood Spot Card
- Specimen Volume: Minimum: 2 Spots, Preferred: 5 spots
- Specimen Stability: Dried blood spots are stable at ambient temperature for 30 days.
- Specimen Rejection Criteria: insufficient volume, layering, insufficient drying time

Specimen Collection Instructions
See Blood Specimen Collection from Venipuncture Instruction Manual or Dried Blood Specimen Collection Instruction Manual as applicable

Additional Information:
1. Indications for Testing: General population screening of pregnant women
2. GA at draw date is calculated by EDC or by Ultrasound. If data is entered for both methods, gestational age will be calculated based on Ultrasound. This comment relates to Ask on Entry questions (EDC, EDCUS, GAUS and USDATE).

3. Special Timing: Draw blood between 15 weeks, 0 days and 21 weeks, 6 days.

4. Do not draw blood after performing amniocentesis, as that may lead to an artificially increased serum alpha-fetoprotein level and unreliable results.

5. Specimen Stability: Serum specimens are stable at ambient temperature for 6 days. Dried blood specimens are stable at ambient temperature for 30 days.

6. Rejection Criteria Serum: hemolysis, lipemia, incorrect tube type

7. Rejection Criteria Dried Blood: insufficient volume, layering, insufficient drying time

CPT Code: 1 x 82105

Reference Values:

Total ONTDs/VWD
AFP MoM < 2 MoM are Within Range
AFP MoM 2-2.49 MoM are Borderline Elevation
AFP MoM > 2.5 MoM are Significant Elevation

An Interpretive Report will be provided.

Supplemental Report:
No

Testing Algorithm:

Follow up testing:
1. MSAFP Borderline Elevation and GA<19 weeks: Repeat blood or serum.
2. MSAFP Borderline Elevation and GA>=19 weeks: Genetic Counseling, Ultrasound and offer of amniocentesis.
3. MSAFP Significant Elevation: Genetic Counseling, Ultrasound and offer of amniocentesis.

Consents/Authorizations:
Patient signature on patient authorization/assignment on requisition form is required.

Disclaimers:

Serum Specimens:
The PerkinElmer AFP assay has been approved by the FDA for testing for Open neural tube defects.

Dried Blood Specimens:
The test was developed and its performance characteristics determined by Eurofins NTD, LLC. It has not been cleared or approved by the U.S. Food and Drug Administration. The methods and performance characteristics have been reviewed and approved by the New York State Department of Health.
Test Requisition Instructions

Prenatal Screening Test Requisition Form Instructions

1. **Account Information** - Please enter ordering physician name and referring physician name and phone number, if applicable. A provider signature is required for patients with Medicaid.

2. **Specimen Labels** - Preprinted with the requisition number. Please enter the patient’s last and first name EXACTLY as they appear on the requisition form. Affix label(s) to patient specimen(s). Please complete date drawn and drawn-by fields.

3. **Patient Information** - For all tests, please complete patient weight, ethnicity and current pregnancy information. Complete additional patient history as appropriate for test(s) ordered. Please note, all patient information requested is used to ensure the most accurate risk assessment possible for your patient.

4. **Gestational Age** - Complete for tests other than First Trimester Screen FB, Sequential Screen I FB, PreeclampsiaScreen™ T1 or Maternal Fetal Screen™ T1 which require CTN (see section 3).

5. **Biophysical Information** - Complete this section for preeclampsia screening only.

6. **Ultrasound Information** - Please provide sonographer and supervisor names and credentialing numbers. Enter all ultrasound information as appropriate for test(s) ordered.

7. **Test Requests** - Tests are ordered by specimen type. Check all tests that apply and provide appropriate ICD codes.

8. **Cell Free DNA** - BOTH the physician and patient signatures are required.

9. **Billing Information** - Provide photocopy of front and back of insurance card or print the information in the required fields.

10. **Patient Signature** - Required for all tests.

Please call 1-888-NTD-LABS (688-5227) for further assistance.

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### EMR Ask at Order Entry (AOE) Questions:

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<th>Question ID</th>
<th>Description</th>
<th>Type</th>
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<td>REPEAT</td>
<td>Repeat Specimen for Elevated MSAFP</td>
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<td>MATWT</td>
<td>Maternal Weight</td>
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<td>MWLBSKGS</td>
<td>Units</td>
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<td>Family History of ONTD</td>
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<td>IVFAGE</td>
<td>IVF-Age of Egg (years)</td>
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<td>Is Patient a Smoker</td>
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<td>VALPRO</td>
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Example Report

AfP Test (for ONTDs)

Patient Name: BORDERLINE, AFPOONLY
Client ID #:
Patient ID #: 17SE0099992
Date of Birth: 08/28/72
Insulin Rx: No
Age at EDC: 45
Fam. Hx ONTD: No
Mat. Weight: 226 lbs
State: NY
Ethnicity: Caucasian
Draw Date: 03/11/17
Prev Chrom Hx: None
GA @ Draw: 15w1d
Multi. Preg: No
GA by: EDC By U/S
Smoker: No
Date Received: 03/13/17
EDC: 09/01/17
Report Date: 03/14/17

2nd Trimester

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<th>Value</th>
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<th>%ile</th>
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<td>AfP</td>
<td>42.27 (IU/ml)</td>
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Risk Table

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<th>Risk After Screening</th>
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<tr>
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<td>MoM</td>
<td>1 in 588</td>
<td>1 in 323</td>
<td>BORDERLINE ELEVATION</td>
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<td>Open Spina Bifida</td>
<td>1 in 2,000</td>
<td>1 in 536</td>
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<tr>
<td>Anencephaly</td>
<td>1 in 1,429</td>
<td>1 in 1,350</td>
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<td>Ventral Wall Defect</td>
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Total ONTDs/VWD

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<th>Decreased Risk Zone</th>
<th>Borderline Elevation</th>
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<td>0.8</td>
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<td>2.6</td>
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Recommendations:

- Repeat blood or serum.

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Enhance Prenatal Screening with MSAFP

NTD Labs’ second-trimester MSAFP screening, available via dried blood spot:
A simple solution for ONTD risk assessment

ACMG guidelines recommend that all pregnant women, regardless of medical background and family history, be offered maternal serum alpha-fetoprotein (MSAFP) screening between 16 to 18 weeks’ gestation.1

Second-trimester MSAFP identifies pregnancies at risk for the following:
- Open neural tube defects (ONTDs)
- Anencephaly
- Ventral wall defects

MSAFP may also be used to predict increased risk for:
- Low birth weight
- Macrosomia
- Placenta accreta
- Premature birth
- Stillbirth
- Spontaneous abortion

Why MSAFP screening from NTD Labs?
- Supports ACOG recommendations
- Provides high detection rates for ONTDs2
  - 90% detection rate for open neural tube defects
  - 98% detection rate for anencephaly
- Offers fast turnaround time (24-48 hours)
- Low out-of-pocket costs for patients
  - NTD Labs is well-contracted with third-party payers
- Offers flexibility, convenience and ease of use
  - Flexible sample types—available on dried blood spot (DBS) or whole blood
  - Same requisition form as other NTD Labs prenatal screening tests
- Simple, easy-to-read reports, available through online portal (eReports)

For more than 30 years, NTD Labs has pioneered the research and development of prenatal testing protocols for ONTDs, Down syndrome, trisomy 18 and trisomy 13. Today, NTD Labs is a proven leader in prenatal testing, serving universities, medical centers, hospitals, laboratories, obstetricians and maternal-fetal medicine specialists worldwide.

Count on NTD Labs for your prenatal screening needs.
For more information, please contact your local Genetic Accounts Executive, or call us at 1-888-NTD-LABS (688-5227).


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Patient Information Brochure
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