

|  |  |  |  |
| --- | --- | --- | --- |
| Title: | pH Testing with Nitrazine Paper | | |
| Department/Service Line: | Laboratory | | |
| Approver(s): | CLIA Director | | |
| Location/Region/Division: | Central Texas | | |
| Document Number: | CTX.LAB.POC.102.R\_V1 | | |
| Last Review/Revision Date: | See Signatures | Origination Date: | 2/2016 |

# sCOPE

This document applies to employees that perform pH testing with Nitrazine Paper within the Central Texas Division of Baylor Scott & White Health.

# DEFINITIONS

None

|  |
| --- |
|  |
| method/Utility |
| The acid base maintenance of the body is critical for optimum function. Body fluid pH can be useful in determining a fluid source of origin. Phenaphthazine disulphonate reacts with the hydrogen ions (protons) and a color reaction takes place.  Rupture of the amniotic membrane can result in small volumes of amniotic fluid leaking into the upper vagina. The presence of amniotic fluid tends to elevate the pH of the upper vagina.  Detection of this pH increase using a pH indicator dye has been shown to assist in determining the presence of amniotic fluid.  Amniotic fluid has a neutral pH while the pH of the upper vagina is normally acidic.  A pH of 6.5 of higher is consistent with leakage of amniotic fluid.  Test may be used for an initial screen for the rupture of the amniotic membrane or determining the pH of eye fluid. |

# PROCEDURE

**Specimen**

* Amniotic Fluid
  + Do not dilute specimen before testing.
  + Protect against exposure to acid or alkaline fumes prior to testing.
  + Specimens contaminated with blood will interfere with result reading. Bloody specimens should be read with caution, as it is difficult to interpret color reaction.
* Eye Fluid in the Conjunctival Sac

**Reagents/Equipment**

pH paper must be requested from the Point of Care Office at Baylor Scott & White Medical Center – Temple.

* Store Phenaphthazine reagent paper at room temperature avoiding excessive heat in the provided plastic dispenser. Once opened the paper is good for six months.
* Upon opening, the test personnel must record the open date and six month open expiration date on the provided sticker contained on the dispenser.
* Quality Control pH buffers, 5.0 and 7.0. Store at room temperature. Buffers are good until the manufacturer’s expiration date.

**Safety Precautions**

Appropriate PPE such as gloves should be worn during testing or when handling specimens.

**Quality Control Procedure**

Two levels of buffer pH controls (5.0 and 7.0) are run with each new lot number or shipment at the Point of Care Office of Baylor Scott & White Medical Center - Temple.

1. Tear approximately 2 inches of pH paper from the roll.
2. Place a drop of pH 5.0 Buffer solution on the paper.
3. Shake off excess liquid.
4. Immediately compare the color of the pH paper with the color scale on the container. Acceptable range for 5.0 buffer is 4.5 – 5.5.
5. Repeat steps 1 – 5 using pH 7.0 Buffer solution.
6. Immediately compare the color of the pH paper with the color scale on the container. Acceptable range for 7.0 buffer is 6.5 – 7.5.
7. Document results on provided quality control log.
8. No pH paper will be distributed for use until both levels of controls are within acceptable ranges.
9. Note any corrective actions.

*Note: Selection locations may choose to run controls more frequently following the steps above.*

**Patient Testing Procedure**

1. Tear approximately 2 inches of pH paper from the roll.

* Amniotic Fluid
  1. Place a drop of amniotic fluid on the paper.
  2. Alternatively, wrap the paper around the end of the fingers of a gloved hand and insert into the birth canal.
* Eye Fluid in the Conjunctival Sac

1. Holding the paper between the thumb and forefinger, place the paper in contact with fluid in the conjunctival sac.
2. Immediately compare the color of the pH paper with the color scale on the container.

**Result Interpretation**

**Amniotic Fluid**

* pH Range 4.5 - 6.0 = Intact amniotic membrane
* pH Range 6.5 - 7.5 = Ruptured amniotic membrane

**Eye Fluid**

* Normal Eye pH = 6.9 – 7.2

***Procedural Notes:***

* The color of the pH paper before it is immersed in the sample is not crucial and is not indicative of a pH value. The initial color before immersion can range from tan to olive green.
* A false reading is likely to be encountered in women with intact membranes who have an unusually large amount of bloody show, since blood, like amniotic fluid, is not acidic.
* Accuracy is questionable in cases in which the amount of fluid is small and therefore more susceptible to change in pH by admixed blood and vaginal secretion.
* Only the color chart included with each specific package of Nitrazine pH paper should be used. If the chart is missing, discard roll and open a new roll of paper.

**Reporting Results**

All testing and results should be documented in the EHR.

# ATTACHMENTS

Nitrazine pH Quality Control Log (CTX.LAB.POC.101.A1)

Nitrazine pH Training Form (CTX.LAB.POC.101.A2)

# RELATED DOCUMENTS

None.

# REFERENCES

1. Pritchard, J.A., M.D., et al, Williams Obstetrics, 17th Edition, 1985, Appleton-Century-Crofts, Norwalk, Connecticut.
2. Decon Laboratories, Inc. Phenazine Paper (package insert). King of Prussia, PA; 2008

|  |
| --- |
| Revision History |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Version #** | **Effective Date** | **Description of Change** | **Revised By** | **Removed Date** | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| approvals | | | | |
|  | | | | |
| **Title** (of the document) | pH Testing with Nitrazine Paper | **Number** | CTX.LAB.POC.101.R\_V1 | |
| *[Typed Name of Facility]* | | | | |
| **Name** | | | | **Date** |
| *Author: POC Working Group* | | | | 2/5/16 |
| *Subject Matter Expert: [Typed Name and Credentials]* | | | |  |
| *Manager: [Typed Name and Credentials]* | | | |  |
| *CLIA Director: [Typed Name and Credentials]* | | | |  |
|  | | | | |
| routine review (central texas division only) | | | | |
|  | | | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Reviewed**  **(check)** | **Revised**  **(check)** | **Date** | **Initial First Name, Last Name** | **Reviewed**  **(check)** | **Revised**  **(check)** | **Date** | **Initial First Name, Last Name** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |