

Toluidine Blue Dye Procedure

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Definition:

Toluidine Blue Dye (TBD) (Toluidine blue or “T-Blue”) is a nucleic stain (basic thiazine metachromatic dye) that binds to nucleated squamous cells as it has a high affinity for acidic tissue components, and stains DNA- and RNA-rich tissues.

Purpose

Provides guidelines for clinicians on the use of Toluidine Blue Dye during the anogenital exam.

Standard of Care

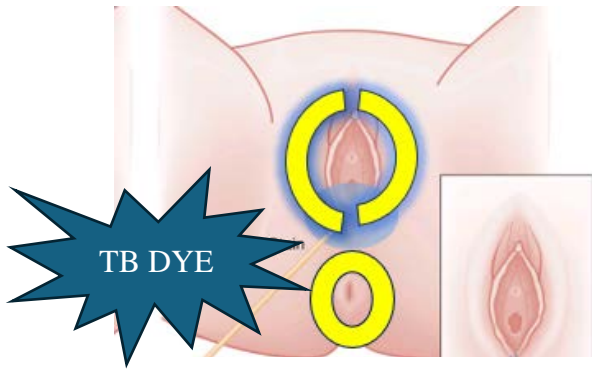
TBD is a tool and technique that may be used to assist in the documentation of anogenital findings during an exam in the pediatric and adult population. The Material Safety Data Sheet (MSDS) should be reviewed regarding the use of this product.

Equipment Needed

- Gloves
- Gauze (4x4)
- Baby wipes (hypoallergenic)
- Toluidine blue 1% aqueous solution dye (multidose or single-use applicator)
- Cotton swabs (if a multidose vial is used)
- Medicine cup (if a multidose vial is used)
- Lubrication (Non-spermicidal and water-soluble)
- Camera

Procedure

- A. Gather supplies and apply gloves.
- B. Assess the area where the suspected injury or abnormal finding is and obtain photo documentation of the finding *prior to utilizing the dye*. Collect evidence swabs before cleaning and applying dye.
- C. TBD can be applied to epithelial tissue where injury or other findings may be seen with gross visualization or magnification. TBD should not be applied to mucous membrane tissues of the vulva including the hymen, and vagina. Uptake of TBD in mucous membrane tissues can result in artifact.



Dye application may be used on the labia majora, labia minora, posterior fourchette, perineal body and perianal area. Apply dye in a horseshoe design in the sulcus bilateral and the posterior fourchette. Dye applied to the anus is a separate step following the completion of the genital examination.

- D. If using a single dose vial squeeze the tube to introduce the dye into the swab applicator, if using a multidose solution apply directly to the swab.
- E. Apply to the suspected area of injury or abnormal finding directly, TBD should be allowed to 'dry' about 90 seconds after application
- F. Apply lubrication to dye area and then using the baby wipe away any excess dye. You may have to repeat this if dye is still present.
- G. Complete photo documentation after dye has been wiped away. Vaginal Speculum insertion is completed *after dye procedure*.
- H. Use a different applicator (cottons swab or TBD applicator) between sites (ex. After using dye for the vulva assessment, use a new swab for anal assessment).
- I. Document findings in the medical-forensic record.
 - 1. Any dye that adheres and outlines an injury and is not able to be wiped away can be documented as "positive Toluidine Blue Dye uptake".
 - 2. If there is no dye that adheres, or if there is non-linear/diffuse uptake, this can be documented as "negative Toluidine Blue Dye uptake". (McCauly et al., 1987)
- J. Patient education should be provided throughout the exam and at discharge.
- K. TBD residue will 'shed.' Patients should be advised to wear a liner or anticipate that some excess TBD may stain underwear or clothing.



Before Dye and After Dye applied

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Description of injury: Laceration at 6 o'clock in the posterior fourchette extending superiorly into the fossa navicularis. Abrasion 5-8 o'clock. Positive dye uptake.

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