

January 2015

## **Guidance for Preparation and Administration of BCG and tuberculin**

BCG and tuberculin are only available in multidose vials.

This guidance on the preparation and administration of BCG and tuberculin has been drawn up following consultation with the Health Protection Surveillance Centre and international evidence and best practice.

This guidance should be reviewed following the publication of Irish regulations to comply with the 2013 EU Sharps Directive and when sterile plastic straws for drawing up vaccines are available as an alternative to needles.

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### Guidance for Administration of BCG

- BCG must be reconstituted by adding the solvent (colourless liquid) to the white crystalline powder in the multi dose vial
- There should be a “clean area<sup>1</sup>” to reconstitute the multi dose vaccine
- Perform hand hygiene using alcohol hand rub/gel or soap and water if your hands are physically soiled
- Before reconstitution visually inspect the vaccine for any foreign particulate matter and/or abnormal physical appearance. If either is observed, discard the vaccine
- Do not swab the rubber bung on the vial
- Reconstitute the vaccine using an aseptic technique by withdrawing the volume of the solvent stated on the label by means of a 2ml syringe using a 23 gauge needle (blue) and add it to the vial containing the powder
- Invert the vial a few times - DO NOT SHAKE
- Gently swirl the vial before drawing up each dose - do not swab the rubber bung
- Use Method 1 to draw up each dose  
Methods 2 or 3 should only be used if tuberculin safety syringes are unavailable

Method 1	Method 2	Method 3
Insert needle attached to tuberculin safety syringe <sup>2</sup> into the reconstituted vaccine	Attach a 23G blue needle to a 1ml syringe <sup>3</sup> and insert into the reconstituted vaccine	Insert brown 26G needle attached to 1ml syringe <sup>3</sup> into the reconstituted vaccine
Draw up slightly more than 0.05 or 0.1 ml vaccine and remove needle and syringe from vial	Draw up slightly more than 0.05 or 0.1 ml vaccine and remove syringe from needle	Draw up slightly more than 0.05 or 0.1 ml vaccine and remove needle and syringe from vial
Repeat as needed	Attach a 26G brown needle to each syringe	Repeat as needed
Recap the needle	Draw up ~ 6-7 doses consecutively until the vial is empty using the same blue needle <sup>4</sup>	Recap the needle

- Remove any air bubbles and extra vaccine to give the correct dose
- The vaccine should appear homogenous, slightly opaque and colourless. In the event of other variation being observed, discard the vaccine
- Administer<sup>5</sup> vaccines within 10 -15 minutes
- Dispose of used BCG vials in the “clean area” (multi dose vials should not be brought to the patient’s side)
- Any unused opened BCG vials must be discarded after 4 hours

<sup>1</sup> Designated clean medication area that is not adjacent to areas where potentially contaminated items are placed

<sup>2</sup> 28GA x 1/2 in (0.356 X 13 mm) and 1 ml syringe should be used as this provides an accurate dose of 0.05 or 0.1ml and allows more doses per vial as there is no dead space

<sup>3</sup> 26 GA 3/8 in Luer (0.45 X 10 mm) and 1 ml syringe or insulin syringes if calibrated to a clearly defined 0.05ml

<sup>4</sup> Never leave a **drawing up needle** inserted into a multi-dose vial after drawing up because it leaves the vial vulnerable to contamination

Discard the **drawing up needle** immediately into an approved sharps disposal container

<sup>5</sup> If the skin at the injection site is visibly dirty it should be cleaned with soap and water. There is no need to use a disinfectant e.g. alcohol swabs)

### Guidance for Administration of Tuberculin 2 TU

- Tuberculin 2 TU is a clear colourless pale yellow solution in a multi dose vial
- There should be a “clean area<sup>1</sup>” to draw up the tuberculin
- Perform hand hygiene using alcohol hand rub/gel or soap and water if your hands are physically soiled
- Visually inspect the solution for any foreign particulate matter and/or abnormal physical appearance.- if either is observed, discard
- Do not swab the rubber bung on the vial
- Use Method 1 to draw up each dose  
Methods 2 or 3 should only be used if tuberculin safety syringes are unavailable

Method 1	Method 2	Method 3
Insert needle attached to tuberculin safety syringe <sup>2</sup> into the vial	Attach a 23G blue needle to a 1ml syringe <sup>3</sup> and insert into the vial	Insert brown 26G needle attached to 1ml syringe <sup>3</sup> into the vial
Draw up slightly more than 0.1 ml tuberculin and remove needle and syringe from vial	Draw up slightly more than 0.1 ml tuberculin and remove syringe from needle	Draw up slightly more than 0.1 ml tuberculin and remove needle and syringe from vial
Repeat as needed	Attach a 26G brown needle to each syringe	Repeat as needed
Recap the needle	Draw up doses consecutively until the vial is empty using the same blue needle <sup>4</sup>	Recap the needle

- Remove any air bubbles and liquid to give the correct dose
- Administer<sup>5</sup> tuberculin
- Dispose of used tuberculin vials in the “clean area” (multi dose vials should not be brought to the patient’s side)
- Any unused syringes or opened tuberculin vials must be discarded after 4 hours

<sup>1</sup> Designated clean medication area that is not adjacent to areas where potentially contaminated items are placed

<sup>2</sup> 28GA x 1/2 in (0.356 X 13 mm) and 1 ml syringe should be used as this provides an accurate dose of 0.05 or 0.1ml and allows more doses per vial as there is no dead space

<sup>3</sup> 26 GA 3/8 in Luer (0.45 X 10 mm) and 1 ml syringe or insulin syringes if calibrated to a clearly defined 0.05ml

<sup>4</sup> Never leave a **drawing up needle** inserted into a multi-dose vial after drawing up because it leaves the vial vulnerable to contamination

Discard the **drawing up needle** immediately into an approved sharps disposal container

<sup>5</sup> If the skin at the injection site is visibly dirty it should be cleaned with soap and water. There is no need to use a disinfectant e.g. alcohol swabs)

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## References

Description of BCG SSI

Guidelines for injection of BCG SSI

<http://www.ssi.dk/English/Vaccines/BCG%20Vaccine%20Danish%20Strain%201331.aspx>

Description of Tuberculin PPD RT 23

Intradermal injection of tuberculin/ Mantoux test

<http://www.ssi.dk/English/Vaccines/Tuberculin%20PPD%20RT%2023%20SSI.aspx>

Centers for Disease Control and Prevention Medication Preparation questions

[http://www.cdc.gov/injectionsafety/providers/provider\\_fags\\_med-prep.html](http://www.cdc.gov/injectionsafety/providers/provider_fags_med-prep.html)

Immunisation Action Coalition

[http://www.immunize.org/guide/aov06\\_administer.pdf](http://www.immunize.org/guide/aov06_administer.pdf)

Immunisation Action Coalition

[http://www.immunize.org/askexperts/experts\\_general.asp](http://www.immunize.org/askexperts/experts_general.asp)

Magellan™ Insulin and Tuberculin Safety syringe – Instructions for use

<http://www.hse.ie/eng/health/immunisation/hcpinfo/OtherVaccines/bcgtb/>

Protocol for the administration of SSI tuberculin PPD under a patient specific direction by nurses and midwives working within NHS Grampian

[http://www.nhsgrampian.com/grampianfoi/files/Mantoux\\_577\\_0713.pdf](http://www.nhsgrampian.com/grampianfoi/files/Mantoux_577_0713.pdf)