

## **Urgent Field Safety Notice**

### **StealthStation™ Cranial and Synergy™ Cranial**

#### **Depth Gauge Inaccuracy**

October 2018

Medtronic reference: FA848

Dear Healthcare Professional,

The purpose of this letter is to provide information related to potential inaccuracy during biopsy procedures using the StealthStation™ S7 Depth Gauge feature. This information is intended to supplement the StealthStation™ S7 and StealthStation™ i7 Cranial Software Guides. This correction applies to all StealthStation™ S7 and i7 systems running Synergy™ Cranial and StealthStation™ Cranial software. Our records indicate that you may have one or more systems installed with an affected version of the software.

#### **Issue Description:**

In navigated biopsy procedures, where the "Navigate Projection" feature is used and the projection is longer than the length of the plan, the graphical Biopsy Depth Gauge feature can display inaccurate information. The Biopsy Needle Depth Gauge is a numerical and graphical representation of the needle cutting window in the Guidance view quadrant to assist in visualization of the cutting window position.

During a biopsy procedure, the monitor shows four quadrants (Trajectory 1, Trajectory 2, Guidance, and Probe's Eye views) as well as the Biopsy Depth Gauge. The overlay of the Biopsy Needle within the anatomical views accurately indicates the correct tip location of the instrument. However, if "Navigate Projection" is selected, and the projection is longer than the length of the plan, then the Biopsy Depth Gauge graphical display inaccurately depicts that the tip of the instrument has not yet reached the plan target. Since 2011, Medtronic has received seven (7) complaints potentially related to this software anomaly, one in which healthy tissue was biopsied.

The image on page two contains an example of the error use case. All views correctly show that the instrument is past the target, and the Depth Gauge correctly displays the past-target measurement of -63, which indicates the instrument tip has advanced 63 mm beyond the intended target. However, the graphical Biopsy Needle cut window appears not to have advanced to the target position.

If the surgical team relies solely on the graphical representation in the Biopsy Depth Gauge feature and disregards other factors (such as setting the Mechanical Depth Stop on the Biopsy Needle to the indicated length, using the correct display within the Trajectory views, and using the 'distance to target' values within the anatomical views), the Biopsy Needle could be inserted too deeply, resulting in potential biopsy of healthy brain tissue or damage to critical structures.

Medtronic is working to ensure all impacted customers are fully aware of the risk and associated mitigations.

The screenshot displays the Medtronic Stealth Station software interface for surgical planning. The main workspace is divided into four quadrants showing different views of a patient's head CT scan. The top-left view shows a 'Trajectory 1' with a green circle indicating a target area and the text 'Trajectory Locked' and 'Target Alignment Error: 0.2'. The top-right view shows a 'Trajectory 2' with a blue line indicating a needle path. The bottom-left view shows a 'Depth Gauge' with a red arrow pointing to the needle tip and a blue arrow pointing to the 'Post Target: 63.0' value. The bottom-right view shows a 'Depth Gauge' with a red arrow pointing to the needle tip and a blue arrow pointing to the 'Post Target: 63.0' value. The interface includes a 'Guidance' panel on the left, a 'Register' and 'Navigate' panel on the right, and a 'Probe's Eye' panel on the far right. A 'Standard Profile' panel at the bottom right shows 'PROCEDURE: Biopsy' and 'PATIENT: Demo Lee'. A 'CONTROL PANEL' at the bottom left includes 'Camera', 'Help', 'Admin', and 'Exit' buttons. A 'MODIFY IMAGES' panel at the top left shows a 'Tip Stop Point: 105.0 mm.' and a 'Passive Biopsy Needle Small Passive Cranial Frame' label.

Guidance

Register

Navigate

Probe's Eye

Depth: 118.1

Post Target: 63.0

Trajectory 1

Trajectory 2

Tip Stop Point: 105.0 mm.

Passive Biopsy Needle  
Small Passive Cranial Frame

Standard Profile

PROCEDURE: Biopsy

PATIENT: Demo Lee

Go View Select Snapshot Foot Switch

Bioopsy

Select Plan: Plan 2

View

Set Entry Tonic Set

Set Tonic Set

0 55.0

Unlock Trajectory

View Settings

Create Checkpoints

Camera Help Admin Exit

MODIFY IMAGES

Two Trajectory views correctly display that the Needle has advanced past the target.

The Depth Gauge graphical representation inaccurately displays that the Needle has not reached the target.

The Depth Gauge correctly states that the Needle is 63 mm past the target.

# Medtronic

## Mitigations to Eliminate this Risk:

- Do not set a projection longer than the length of the surgical plan.
- Per the Cranial Software Pocket Guide, always use the Biopsy Needle Mechanical Depth Stop.
- Ensure *Navigate Instrument Tip* setting is selected prior to locking the trajectory and subsequently navigating the instrument (see image below).



## Requested Action:

Please review this information with all physician users.

The Competent Authority of your country has been notified of this action.

We regret any inconvenience this may cause. We are committed to patient safety and appreciate your prompt attention to this matter. If you have any questions regarding this communication, please contact your Medtronic Representative.

Sincerely,