

# EXABLATE PROSTATE (WS 8.1) DQA CHECKLIST



Ensure all items are present for treatment

Site Accessories	Treatment Kit (Disposable, Per Patient)	
<input type="checkbox"/> DQA Phantom	<input type="checkbox"/> Disposable Shell + White O-Ring (x2) + Locking Pin (x2)	
<input type="checkbox"/> Phantom Holder	<input type="checkbox"/> Leg Sleeves	<input type="checkbox"/> Cradle Drape (Cover)
<input type="checkbox"/> 2 Patient Leg Holders (W/ Pads and Straps)	<input type="checkbox"/> Surgical Tape	<input type="checkbox"/> Probe Drape
<input type="checkbox"/> High-Level Disinfection Cart W/ 4 Containers	<input type="checkbox"/> US Gel (Pouch, Sterile) – 6	<input type="checkbox"/> Probe Cable Drape
<input type="checkbox"/> Cleaning and Disinfection Materials	<input type="checkbox"/> Purified Water Pouch (1L)	<input type="checkbox"/> Motion Unit Drape

## TABLE SETUP

- Verify Exablate probe underwent **High-Level Disinfection (HLD) procedure** prior to treatment – if not, **perform HLD procedure** (refer to PUB71004685)
- Confirm **MR console** was **rebooted** at beginning of the day – if not, **reboot it**
- Dock the **Exablate Prostate table** to the MR
- Lock the table **connection lever/quick coupler cables**
- Place **posterior** part of **imaging coil** on table, adjacent to leg holder track
- Attach **Exablate table coil** and **MR imaging coil** to MR coil connection unit
- Connect **water pouch** to table hose – hang bag on hanger
- Power on **Exablate workstation** and log in (username/password: **fus**)
- Place probe into **probe preparation station** and rotate to **horizontal** position
- Visually inspect** transducer integrity for scratches/cracks/etc.

## PROBE SETUP

- Place white **O-ring** over probe's groove
- Gently attach **disposable shell** over transducer – **align** shell's **hole** with the hole on **top of probe**
- Insert **locking pin** into hole on top of shell – ensure locking pin is **completely** inserted
- Carefully **unroll** balloon over the **neck of probe** and **rotate** probe back to **vertical** position
- On **water system** display, press on **"Prepare"**

- Fill** probe with water (up to  $\frac{1}{2}$  height) and press **"Start Circulation"**
  - Verify there are no water leaks
- Circulate water until **no air bubbles** are left inside balloon
  - Press **Fill** and **Drain** alternately, during circulation
- Then, **press "Insert"** and **"Start Circulation"**
- Place **phantom holder** on center of posterior imaging coil
- Remove probe** from preparation station – **contract and lock** shell in place (arrow-side **up**)
- Connect** probe to motion unit's **yellow clips**
- Center (place)** probe balloon within phantom holder groove and **lock positioner knobs**
- Connect **probe cable pin** to hole in back of **positioner**
- Press **"Enable"** + **"Connect"** simultaneously – motion unit will automatically mate with probe
- After** mating, press **"Enable"** + **"Home"** simultaneously, returning probe to home position
- Cover **probe balloon** with **US gel** – remove any bubbles visible within gel
- Place (roll)** **DQA phantom** onto holder and **strap down** – fill balloon (press **" +15cc"**) until phantom **slightly** raises
- Place **anterior** imaging coil over center of phantom – strap to posterior coil
- Press **"Enable"** + **"Test"** simultaneously – wait for motion limit test to finish (status light turns **green**)
  - If status light turns **orange**, remove obstructions and repeat test
- Set **landmark** (on center of imaging coil) and **advance** cradle to scan position

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## IMAGING SETUP

- Start new exam on **MR console** using **FUS/Exablate Plan Prostate** protocol (or similar) and run a **Localizer**
- Start new Prostate treatment on **Exablate workstation**
- Run “**Positioning Scans**” 
  - Verify that treatment envelope sufficiently covers phantom
- Run “**Calibration Scans**” 
  - Verify **proper balloon-phantom coupling** (no air bubbles/artifacts in beam path)
- Press “**Approve**”  when finished
- Under “**Treatment Parameters**”, switch “Protocol Name” to “**DQA**” and press **Apply**
- Define **scanning range** of **at least 30 mm** (10 slices) over **center of phantom** (by dragging the graphical lines on Sagittal Positioning image)
- Press  to **automatically scan axial Planning Images**
  - Sagittal** and **coronal** planning images will be **automatically** reformatted from axial images
  - Baseline Anatomy Scans** will be acquired **automatically** after the planning images scan
- On **axial planning images**, draw **rectal wall**  on every 3<sup>rd</sup> slice along **balloon-phantom interface**
- Draw **representative prostate capsule**  on two slices, skipping one slice in-between
- Draw **ROT**  within prostate capsule on **central slice** of prostate capsule
  - It is recommended drawing ROT with same **orientation** as lesion (e.g., right/left, etc.)
- After drawing, select **compute balloon boundaries** 



## TEST SONICATIONS

- Move to “**Treatment**” stage 
- Select **add spot**  – click to add a new spot within ROT
- Press “**Sonicate**” 
  - Ensure **balloon temperature** is **below 30° C** before sonicating

- After sonication completed, select “**Red**” temperature setting (on left panel) 
- Reduce temperature threshold until **red spot** is visible inside the **prostate capsule** drawing
  - If red spot is not within dotted circle, select **adjust spot location**  and click red spot center
- Press “**Continue**”  – repeat alignment verification if spot location was adjusted
- Under Spot Parameters, switch from “Align” to “**Treat**”
- Press **add spot button**  – select “**Macro spot**” and add a new spot within ROT
- Press “**sonicate**” 
- Allow at least **three sub-spots** to sonicate successfully – after, end sonication by pressing **manual stop sonication button** on Exablate console. **Release** button afterwards
  - Verify ablative temperatures (> **65° C**) within ROT



## TREATMENT PREPARATION

- Exit treatment and return to main screen 
- On water system display, press “**Extract**”
- Using MR controls, return cradle back to home position
- Unstrap and remove **anterior** imaging coil from phantom
- Remove phantom** and carefully clean US gel from all parts of the system
- Remove** probe from phantom holder
- Disconnect** probe from motion unit
  - Depress **white buttons** on side of motion unit – **contract and lock** shell in place
  - Release probe from motion unit’s **yellow clips**
- Place probe into **probe preparation station** and rotate to **horizontal** position
- On **water system** display, press on “**Prepare**” and bring balloon to desired **insertion volume** and press “**Start Circulation**”, then **rotate** probe back to **vertical** position
- Cover cradle and its parts with **disposable covers/drapes**
- Proceed with **patient preparatory procedures** (for treatment), as described in the **Operator Manual**