

Procedures/Diagnostic Tests

Percutaneous radiofrequency ablation

You are scheduled for percutaneous radiofrequency ablation. Percutaneous radiofrequency ablation is a new way to treat cancer. “Percutaneous” means through the skin. “Radiofrequency” refers to the radio waves used in this treatment. “Ablation” means tissue destruction. In this type of treatment, radio waves create heat to destroy the tumor.

Together, these words mean radio waves, sent via a probe put through a small cut in the skin, kill cancer tumors with heat.

Using ultrasound, CAT (computed axial tomography) scans, or MRI (magnetic resonance imaging), the radiologist puts a probe through the skin and directly into the tumor. The probe is connected to equipment that delivers radio waves into the probe’s tip. These radio waves create heat in the tissue around the tip of the probe. This heat kills the cells in a small area around the probe tip. Ultrasound, CAT scan, or MRI is used during the procedure to check the probe’s position and to verify the area of tissue that has been treated.

Depending on the tumor’s size, the probe may be guided and repositioned during the procedure to try to destroy the whole tumor. A small margin of normal tissue near the tumor may be destroyed, too. Most patients tolerate this procedure well.

Preparation

- Your blood will be drawn for routine tests.
- Two hours before the procedure, you may drink only clear, nonalcoholic liquids.
- You must not eat any solid foods for 8 hours before the procedure.
- Wear a hospital gown, with the opening in the back.
- Please arrive in the Diagnostic Radiology (x-ray) Department 15 minutes before your procedure is scheduled.
- The radiologist and a nurse from the special procedure section will sit down with you to explain the procedure, alternative treatments, and risks. They will also answer any of your questions.
- The radiologist will ask you to read and sign a consent form, which gives your permission for the procedure to be performed.

Procedure

- Your vital signs (heartbeat, blood pressure, breathing, and temperature) will be monitored before and during the procedure.
- The nurse will place an intravenous (I.V.) line in one of your arms. You will get fluid and medications through this line. You will be given medication (sedation) to keep you relaxed and slightly drowsy during the procedure.
- Numbing medicine (local anesthetic) will be injected into the skin where the probe will be inserted. You will feel a slight pinprick when the anesthetic is given.
- You will be asked to stay still during the procedure. From time to time, the radiologist may ask you to take a deep breath, hold your breath, or exhale as the probe is positioned.
- Whenever you feel discomfort, you may be given pain medication through your I.V. line.
- If you prefer, the radiologist and nurse will explain what they are doing throughout the procedure. You may ask questions at any time.

After the procedure

- When treatment is completed, the probe will be removed, and a small bandage will be placed over the insertion site.
- The dead tumor will not be removed; the body will shed dead tissue through its natural functions. Ideally, over the next few months, the treated tissue will shrink and be replaced by scar tissue.

Are there risks from radiofrequency ablation?

- You may feel some discomfort at the site after the procedure. Pain medication is available if you need it.
- Bruising or bleeding may occur.
- The probe insertion site may become infected.
- If the tumor being treated is in your liver or upper kidney, there is a small risk of lung collapse when the probe is inserted.
- Your physician will review these risks with you in more detail before the procedure begins. You may ask questions at any time.

Special instructions

- Most patients will be on strict bed rest for 2 to 3 hours after the procedure.
- The nurse will monitor your vital signs until you have recovered from the medications that were given to relax you.
- *For patients who have no history of heart failure or kidney problems:*
Drink 8 to 10 8-ounce cups of fluid per day for several days after radiofrequency ablation.

- *For patients who have a history of heart failure or kidney problems:*
Ask your doctor how much fluid you should drink after radiofrequency ablation.
- You may resume your usual diet.
- You may resume usual sexual activity.
- *Do not drive a car, do not make any important decisions, and do not sign legal documents for 24 hours after the procedure. The sedation you received may affect your judgment until it clears from your body.*
- *Do no excessive physical activity for 24 hours.*

Post-procedure Information

- ▶ You have just had radiofrequency ablation of _____.
- ▶ Notify your doctor or nurse if any of the following occur:
 - fever of 101.5 °F (38.5 °C).
 - no urine output for 4 hours after the procedure.
 - lightheadedness, dizziness, or feeling faint.
 - difficulty breathing, shortness of breath, pain with breathing, or chest pain.
 - bleeding or swelling at the probe insertion site.
 - vomiting or coughing up blood.
 - redness, drainage, or tenderness at the probe insertion site.
 - chills, back pain, cloudy or foul-smelling urine.
- ▶ If you have any difficulties or questions, please call the Diagnostic Radiology Department at 301-496-7700 from 8 a.m. until 4 p.m. Monday through Friday, or call your clinic physician.
- ▶ After 4 p.m. on weekdays, or on weekends or holidays, call the NIH page operator at 301-496-1211. Ask the operator to contact your doctor or the doctor on call for your clinic or unit. If you cannot reach one of the NIH doctors and you feel you need immediate assistance, go to the nearest emergency room for treatment.

This information is prepared specifically for persons taking part in clinical research at the National Institutes of Health Clinical Center and may not apply to patients elsewhere. If you have questions about the information presented here, talk to a member of your health care team.

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Questions about the Clinical Center?
<http://www.cc.nih.gov/comments.shtml>

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