Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

About Your Photobiomodulation Therapy

This information explains what photobiomodulation (FOH-toh-BY-oh-MAH-juh-LAY-shun) therapy is. It also explains what to expect before, during, and after your treatment. In this resource, the words “you” and “your” refer to you or your child.

About photobiomodulation (PBM) therapy

Photobiomodulation therapy is a type of low-energy light therapy. It’s also called PBM therapy.

PBM therapy uses special lights called light-emitting diodes (LEDs). They deliver specific wavelengths of light into your skin and tissue. This helps treat lots of skin conditions and other health problems. Different wavelengths of light give off certain colors, such as red or blue. Each color helps your skin and tissue in different ways.

PBM therapy works by shining a red LED light on an area of your body for a short time. The LED light goes into tissue that’s injured or inflamed (red or swollen). This helps blood flow to the tissue. Better blood flow can make the area less inflamed. It helps lower your pain level and heal wounds.

At MSK, we use PBM therapy to:

- **Prevent and treat mucositis (myoo-koh-SY-tis)**. This is redness, swelling, tenderness, or sores in your mouth, or on your tongue or lips. It’s a common side effect of high-dose chemotherapy treatment or radiation therapy to the head and neck.
- **Prevent and treat radiation fibrosis (fy-BROH-sis)**. This is a thickening or

scarring of tissue that's often permanent (does not go away). It's a common side effect of radiation therapy.

- **Help heal wounds and rashes**. Certain cancers, cancer treatments, and procedures can cause wounds or rashes that:
  - Do not fully heal.
  - Are slow to heal.
  - Recur (heal and come back).
- **Treat other dermatologic (skin) conditions**. Your healthcare provider may recommend PBM therapy to treat other kinds of skin conditions. This can include excessive scarring (too much scar tissue) and fungal nail infections.

You can get PBM therapy whether you're inpatient or outpatient.

Before your PBM therapy

Your healthcare provider will decide if PBM therapy is safe for you. Tell them if you:

- **Are taking any medicines**. Tell your healthcare provider about all the medicines you're taking. This includes prescription and over-the-counter medicines, dietary supplements, patches, and creams. A prescription medicine is one you can only get with a prescription from a healthcare provider. An over-the-counter medicine is one you can buy without a prescription.
- **Plan to become pregnant, think you may be pregnant, or are pregnant**. If you're pregnant, the healthcare provider doing the treatment must follow certain safety guidelines. They cannot shine the LED light on your abdomen (belly). This is because the effects of PBM therapy on embryos and fetuses have not been studied enough.
- **Have a history of photosensitive epilepsy (EH-pih-LEP-see)**. This is a type of epilepsy where flashing or flickering lights can cause a seizure. A seizure is a shaking or stiffening of your body that you cannot control.
- **Have tumors**. If you have tumors, the healthcare provider doing the

treatment must follow certain safety guidelines. They cannot shine the LED light near the tumors. This is because the effects of PBM therapy on tumors have not been studied enough.

The day of your PBM therapy

On the day of your PBM therapy:

- Do not put any lotion, cream, makeup, deodorant, powder, perfume, or cologne on the area being treated.
- You can brush your teeth and use mouthwash if you're being treated for mucositis.
- If you have a dressing (bandage) on a wound that's going to be treated, leave it on. Your nurse will take off the dressing for your PBM therapy. They'll put on a new dressing after your treatment.

During your PBM therapy

If you're inpatient, you'll lie in your hospital bed with the head of your bed raised during your treatment. If you're outpatient, you'll either sit in a chair or lie in a reclining chair during your treatment. Babies and young children getting PBM therapy can sit on their parent's lap during treatment.

Your nurse will take off any dressings from the area being treated. They will give you special safety glasses to wear to protect your eyes. They'll also give your parent safety glasses to wear if you are sitting on their lap.

A healthcare provider with special training in PBM therapy will do the treatment. They will use a handheld probe with a red LED light on the end of it.

They will shine the LED light on each treatment area for about 1 minute. For mucositis, the treatment area can be inside your mouth, outside your mouth, or both. For radiation fibrosis, wound or rash care, or dermatologic conditions, the treatment area can be anywhere on your skin.

You may feel some warmth, tingling (feeling of "pins and needles"), or both

during your treatment. This is from the heat of the LED light. PBM therapy uses very low levels of heat. It will not burn or hurt your treatment area. You should not feel any pain or discomfort.

Treatment times are different for everyone. It depends on how many areas are being treated. Some sessions can take as little as 1 to 2 minutes. Other sessions may take up to 15 minutes. Your healthcare provider will tell you how many sessions you'll have.

After your PBM therapy

- If your nurse took off any dressings before your treatment, they'll put on new dressings.
- Your nurse will not need to monitor you after your treatment. If you're outpatient and have no other treatments after this, you can go home right after your treatment is done.
- You do not need to follow any precautions (safety measures). You can go back to your normal activities, including being around others, right after your treatment.
- You may feel warmth, tingling, or both in the treatment area for up to 24 hours (1 day).
- Follow your care team's instructions for mouth care. To learn more, read *Mouth Care During Your Cancer Treatment* (www.mskcc.org/pe/mouth-care). Depending on your condition, you may find these patient education resources helpful:
  - *Radiation Therapy to Your Head and Neck: What You Need To Know About Swallowing* (www.mskcc.org/pe/rt_head_neck_swallowing)
  - *Managing Your Chemotherapy Side Effects* (www.mskcc.org/pe/managing-chemo-side-effects)
- If you have any questions or feel any pain or discomfort after your treatment, call your healthcare provider.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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