

Cold Caps and Scalp Cooling Systems

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Cold caps and scalp cooling systems are tightly fitting, strap-on, helmet-type hats filled with a gel coolant that's chilled to between -15 to -40 degrees Fahrenheit. These caps and scalp cooling systems may help some women keep some or quite a bit of their hair during chemotherapy.

Cold caps and scalp cooling systems work by narrowing the blood vessels beneath the skin of the scalp, reducing the amount of chemotherapy medicine that reaches the hair follicles. With less chemotherapy medicine in the follicles, the hair may be less likely to fall out. The cold also decreases the activity of the hair follicles, which slows down cell division and makes the follicles less affected by the chemotherapy medicine.

During each chemotherapy session, you wear the caps or scalp cooling system for:

- 20 to 50 minutes before
- during
- after

each chemotherapy session (the amount of time you wear the cap after the chemotherapy session depends on the type of chemotherapy you're getting).

Cold caps and scalp cooling systems are slightly different. Cold caps are similar to ice packs. Kept in a special freezer before they're worn, cold caps thaw out during a chemotherapy infusion session and need to be replaced with a new cap about every 30 minutes. Women usually rent the caps and the special freezer. Penguin, Chemo Cold Caps, and ElastoGel are some cold cap brand names.

With scalp cooling systems, the cap is attached to a small refrigeration machine that circulates coolant, so the cap only has to be fitted once and doesn't need to be changed during chemotherapy. Scalp cooling systems, such as the DigniCap System and the Paxman System, are purchased by a cancer treatment center and people are charged to use the system while receiving chemotherapy.

Because the caps are so cold, some women get a headache while wearing the cap. Most women get very cold, so it makes sense to dress warmly and bring warm blankets with you if you decide to try the cold caps.

Women who use cold caps or scalp cooling systems during chemotherapy are advised to baby their hair during treatment:

- no blow drying, hot rollers, or straightening irons
- shampoo only every third day with cool water and a gentle shampoo
- no coloring until 3 months after chemotherapy is done
- gentle combing and brushing

The cost of using the caps varies depending on the manufacturer, the number of chemotherapy sessions you'll be having, and the number of months you'll be using the caps. Some users have said the cost of the caps is comparable to the cost of having a wig made. Check with your insurance carrier to see if the cost of renting the caps is covered.

It's important to know that some doctors are concerned that the caps may prevent the chemotherapy medicine from reaching cancer cells that may be in the scalp. Many studies in Europe, where cold caps have been used since the 1970s, found that scalp cooling does not increase risk of scalp skin metastases, including a 2013 German study.

At this time, the DigniCap Scalp Cooling System and the Paxman System have been cleared by the U.S. Food and Drug Administration (FDA). This clearance means these scalp cooling systems can be marketed in the United States.

Several U.S. studies are continuing to look at the safety and effectiveness of both the DigniCap System and the Paxman System.

It's important to know that cold caps and scalp cooling systems may not work for everyone. Research results show that cold caps and scalp cooling systems were considered highly effective in 50% to about 65% of the women who used them. Women who got only taxane chemotherapy have had better results with cold caps and scalp cooling systems than women who got only anthracycline chemotherapy.

In research on the Paxman System, about 65% of the women treated with taxane-based chemotherapy lost less than half their hair and about 22% of the women treated with anthracycline chemotherapy lost less than half their hair. In research done on the DigniCap System, about 66% of the women treated with taxane chemotherapy had hair preservation. This study didn't look at women treated with anthracycline-based chemotherapy.

Adriamycin (chemical name: doxorubicin), Ellence (chemical name: epirubicin), and daunorubicin are anthracyclines.

Taxol (chemical name: paclitaxel), Taxotere (chemical name: docetaxel), and Abraxane (chemical name: albumin-bound or nab-paclitaxel) are taxanes.

If you're interested in trying cold caps or a scalp cooling system, talk to your doctor about all the factors that need to be taken into account, including your chemotherapy regimen and any other health issues you may have.

The Rapunzel Project is a nonprofit organization dedicated to helping women and men undergoing chemotherapy access and use scalp-cooling technology to help keep their hair. Visit the [Rapunzel Project site](#) for more information. Also, the [Hair to Stay Foundation](#) offers grants to pay for scalp cooling costs.

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Last modified on February 23, 2018 at 5:33 AM

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