



SCALP COOLING GUIDE

OUR GUIDE TO SCALP COOLING

*With thanks to OWise for allowing us to share this
valuable information*

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SECTION ONE

WHAT IS SCALP COOLING?

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Scalp cooling is a non-invasive technique that can reduce scalp hair loss caused by chemotherapy and improve its regrowth post chemotherapy (**8, 9, 10**). Scalp cooling works by reducing the amount of chemotherapy drugs that reach and enter your hair follicles. This is done by activating your natural, energy-preserving bodily reactions to cold temperatures.

These include:

- Vasoconstriction, which is the process in which blood vessels constrict and get smaller in cold areas, reduces overall blood flow to these regions. Therefore, less chemotherapy will reach those areas including the cells of the hair follicles. It has been reported that blood flow is reduced by 60-80% through scalp cooling (**11**).
- Lower temperatures also cause a reduction in follicle activity. This leads to a reduction of chemicals absorbed from the bloodstream, including the amount of chemo drugs absorbed. This reduces the amount of chemo drugs in the hair structure, causing less damage to the hair. Furthermore, a reduction in follicle activity means the hair cells are no longer fast dividing and chemo drugs no longer target them (**12**).

To achieve these reactions the scalp needs to be cooled to 22°C at a depth of 1-2mm ¹³. Scalp cooling techniques lower this scalp area to the desired 22°C with 3°C cooling liquid (**13**).

As cooling only occurs on the scalp, hair loss from other parts of your body, such as eyebrows and pubic hair, will not be protected by scalp cooling.

Scalp cooling is not effective with all chemotherapy drugs and it is not always possible to know how effective the treatment will be. It is mainly effective with individual doxorubicin, epirubicin and paclitaxel chemotherapies (**14,25**). However, with typical chemotherapy regimens based on a taxane drug (e.g paclitaxel) and an anthracycline (e.g. doxorubicin) scalp cooling is less effective (**15, 25**).

Paxman, a leading scalp cooling company, provides a useful decision-making tool. Using your personalised treatment information, it generates the predicted benefit of scalp cooling on hair loss. You can access it here: [Decision Making Guide](#)

Please note that scalp cooling is not a viable option if you have:

- Scalp metastases
- Blood disorders
- If you have or have had skull, brain, or skin cancer

This list is not exhaustive. Please speak to your medical team about possible individual risk factors.

It is important to remember that there will always be a degree of hair loss and your hair can change in appearance. Although studies show high efficacy of scalp cooling in preventing chemo related hair loss, results are still varied across users. Not all users will achieve the same amount of hair retention. Hair type, chemotherapeutic drugs and personal factors can influence effectiveness. Speak to your care team about these individual factors.



SECTION TWO

HOW IS SCALP COOLING DELIVERED?

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There are two scalp cooling methods available, they both aim to keep the scalp cool before, during and after chemotherapy administration. These are cold caps, and refrigerated scalp cooling systems.

The recommended amount of time you cool depends on your chemotherapy regimen. Your medical team will advise you how long you will need to keep the cooling on. On average, cooling is administered 30min prior to chemo infusions, continued throughout the infusions and 60-90 minutes post infusion (**16**). It may be recommended to wear the cap for longer if you have thicker and coarser hair.

If there is significant hair loss after the first chemotherapy session, the post infusion cooling can be extended by 30-60 minutes (17). Bald patches indicate that the cap was not fitted correctly (**12**).



SECTION THREE

COLD CAPS

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A special cap, like a water polo cap filled with ice packs, is fitted on your head. It is replaced about every 30 minutes with a new one from the freezer to ensure they are always providing the correct amount of cooling.

As the cool cap is wire free you can go to the bathroom or stretch your legs. Please be careful of the added weight of the cap and possible dizziness.



SECTION FOUR

REFRIGERATED SCALP COOLING SYSTEMS

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Refrigerated scalp cooling systems work by continuously pumping refrigerated liquid round the cap from a refrigerated cooling system. This has the advantage that the cap does not need to be refitted every 30 minutes.

If you need a bathroom break the cap can be disconnected. It can remain disconnected for around 8 minutes without affecting its efficacy. After which it is recommended to add the time you were disconnected to the total time you should wear the cap.



SECTION FIVE

ARE THERE SIDE EFFECTS?

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Although this is a non-invasive process, it can be uncomfortable:

- You may experience discomfort wearing the cap from the additional weight to your scalp,
- Your scalp can feel cold and tingly (**18**)
- You may develop headaches or feel light-headed and dizzy (**2,18**)
- You may experience nausea (**2,18**)

Keeping track of your various symptoms can help give you a clearer overview of how things have changed – that way it will not all seem so much of a blur. With Owise you can track more than 30 wellbeing indicators, including nausea. Simply input how you are feeling each day using the sliders and view how things develop over time using the graphs. You can even share these with your care team or with a loved one.

Overall patients report low discomfort when scalp cooling (**19**). Studies indicate 15% of patients experience discomfort when scalp cooling (18). However, although not necessarily uncomfortable, another study reported that 33% of patients receiving scalp cooling referred to it as a burden and 53% reported being able to tolerate scalp cooling throughout the treatment (**20**). However, none of the patients discontinued scalp cooling treatment. The current literature reports low discontinuation rates (**10, 21, 22**) with high satisfaction.

It is up to you whether you wish to continue the process or not. Some women stop because of the additional treatment time scalp cooling adds to chemo infusions. It is important to note that women also report satisfaction with their decision to not scalp cool and their post chemo hair (**26**).

As scalp cooling works by reducing the amount of chemo drugs in the scalp area there may be fears of scalp metastasis (cancer recurring in the scalp). However, the current literature does not suggest this is a risk. (**21,23,24**)



SECTION SIX

TIPS FOR SCALP COOLING

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- Dress warm and comfortable, bring blankets
- Bring hot liquids to drink, preferably through a straw. This will also help you stay hydrated and reduce risk of UTIs (Preferably non caffeinated as caffeine dehydrates)
- Patients report the first 20 minutes as being the most challenging. Afterwards the tingling and cold sensation subsides, and they become more accustomed to the feeling.
- To help you relax in these first moments you can practice mindful breathing exercises
- Bring distractions such as magazines. Your healthcare provider will be able to inform you if you will be able to use headphones with your cap. This way you can listen to music, a podcast or watch a tv show on your devices.
- To enhance scalp to cap contact and cooling you can wet your hair and apply a little bit of conditioning
- Although the cap needs to be fitted tightly to improve outcomes, you should be able to breathe, talk and drink comfortably. Provide the care team fitting you with as much feedback to make your fitting as comfortable and successful as possible.
- If using a refrigerated system, you can ask the nurses to adjust the cables leading to the refrigeration to reduce drag and extra weight
- Place gauze or padding under the straps (chin strap, cheeks, ears, forehead)
- You can use surgical tape to help place glasses as the cap may be restricting their usual placement
- After removal of the cap continue sitting for ~10min to allow your body to reaccustom itself and pass any possible dizziness
- Not all hospitals and centres have these scalp cooling facilities, and you may not always be offered them. If you are interested in this treatment, ask your care team which hospitals and facilities in your area offer the service. It is not uncommon to receive scalp cooling treatments in a different location from where you received your oncology care.
- If you do decide for scalp cooling and it is successful in preventing hair loss, you will still need to treat your hair carefully as it will be fragile. This can help to further reduce hair loss.



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**THANK YOU
FOR READING**

