

AVOIDING A WINTER OF SKIN DISCONTENT

A conversation with skin expert Dr. Marty Visscher on winter's effect on hand hygiene and skin care

Winter is in full swing, and so is the harsh weather that comes with it. That means drier skin from the reduced humidity, as well as from dry winds outside and central heating inside. It's especially hard on the hands of healthcare workers who are following proper infection control protocols. Constant hand washing leaves them particularly susceptible to dry, rough and cracked skin.

To gain a stronger understanding of how winter affects hand hygiene regimens and healthcare workers' skin, including skincare advice for healthcare workers, *Hand Hygiene* magazine spoke with Marty Visscher, Ph.D., Director, Skin Sciences Institute at Cincinnati Children's Hospital Medical Center. Visscher is a pioneer in the development and use of sensory techniques to measure the effects of ingredients and products on patients' and consumers' skin, and is an expert on how the environment and skin treatment products affect the skin.



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Dr. Visscher, does the season really have an effect on healthcare workers' hand hygiene routines and their skin?

Dr. Visscher: Yes it does. We actually have published data on this, although we compared a winter time condition with a late spring condition in Cincinnati, which isn't the most extreme. Certainly people in Minnesota, South Dakota, and Idaho and so on would have more dramatic temperature reductions and reductions in humidity, which is what really causes the problem. I think we have clearly demonstrated that what happens in the winter is that the skin doesn't recover.

So winter has the biggest effect?

Dr. Visscher: I think it is a very fair statement to say that winter is pushing people over the edge. In general, healthcare workers' hands have a hard time recovering during time off unless they get an enhanced, intense treatment with

something like Remedy Skin Repair Cream. But in the winter, the question really becomes how much worse is it going to get? You start getting a lot of things happening, more cracking and fissuring in the winter. The issue then becomes what if you start using a hand rub that has alcohol. It's often going to cause stinging and burning, and then the workers go back to using soap and water, which is just going to make things worse in terms of hand damage.

Why is there more cracking and fissuring in the winter? Is it literally because the temperature drops and just the colder conditions and the drier air make it harder on hands and skin?

Dr. Visscher: Yes. It's the lack of humidity in the environment, basically. The bottom line is if the air is very dry and if the skin has any compromise, then it's going to be a race between who gets the water. The environment is the driving force in pulling the water out of the skin.

And that's where using a lotion comes in?

Dr. Visscher: Absolutely. It's more critical this time of year. The lotion provides hydration and moisture to the skin and allows it to hold onto its moisture. Basically what happens in skin damage is that the very top layer effectively gets cracks and holes in it, and that allows things to get through and penetrate it. Irritants cause inflammation. Once that happens, the skin tries to fight the inflammation and it will turn on mechanisms to try and heal it; to try to repair the damage that has occurred to that very top layer of skin. And things that help that include keeping the water localized at the skin surface to keep it from evaporating off into the environment.

Are there differences in lotions, or do they all do the same thing?

Dr. Visscher: The literature is what we really have to go on and what seems to be true is if the product has high water content – and a lot of the lotions are pretty watery – all that water will just evaporate away. So we believe, and the literature suggests, that the lotions that have lower water content can be more of a barrier, and are more likely to be helpful in the winter. So it is a compositional effect.

Is there a difference in terms of the amount you use and how effective it is?

Dr. Visscher: What's generally true is that there is a dose response. People have done studies where they have put on certain dose to look at the effect on skin redness and drying, and there is a sort of an "increased amount and increase benefit," but you get to a point where that plateaus. At that point the extra you are putting on just sits on top of what you just put on. You over saturate to a point and it doesn't do any good.

So you can't just go the whole day doing your hand hygiene routine and then just slap a bunch of lotion on your hand?

Dr. Visscher: That's what we think. There's all this repetitive washing and drying, and we believe that the stress going from wet to dry over and over again during the day probably wreaks havoc with the damage repair mechanism. So if you apply the intense lotion treatment whenever you can throughout the day, then that gives the skin a chance to start doing some of the repair process.

The other thing that it might do, and we don't have any data on this but it certainly makes sense, is if you put the treatment on and then fifteen minutes later you've done something that requires you to have to perform a soap and water wash, it is very possible that the residual lotion still on the skin will serve as a sacrificial lamb so it gets removed by the soap rather than the soap getting directly at the skin itself.

Do you see a trend in healthcare where people are starting to embrace the need for healthcare worker skin care?

Dr. Visscher: People are just starting to get to the point where they are saying lotions need to be designed for the skin they are trying to help. Meaning, they need to allow the water to be retained in the skin because that's what's ultimately going to help restore the skin barrier. And the other thing is that there's pretty good evidence now that having a slightly acidic skin pH will help repair that skin damage.

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So there is progress in knowing what needs to be done to help the skin repair itself?

Yes. One of the things that we noticed was when we started doing these studies – we did these in the hospital intensive care unit with the staff – is that they were very pleased to see that someone was finally paying attention to their skin condition. Healthcare workers were saying, “You know, this institution is doing something about my skin,” and that sends a big message back to the workforce. We’ve seen an increase in awareness, enthusiasm in programs and a focus on the skin as an important part of every patient interaction. So it’s there is sort of a snowball effect.

Tell me a little about your latest study that was published in the American Journal of Infection Control (AJIC).

We decided that it was time to really look at how we can fix significant irritant hand dermatitis. The guidelines from the WHO and the CDC all say that hospitals and healthcare institutions are supposed to provide products to help with the irritating effects of these hand hygiene procedures, so we know that the nurses and healthcare workers have access to lotions. They certainly can get lotion and use it at home.

So we said let’s see if there is any difference in the products that are available and let’s see how much of an improvement we can make.

We decided to use an intense treatment product, in this case Remedy Skin Repair Cream, because we wanted to see how much of the daily skin damage we could repair. And we also wanted to see if there was something different about Remedy versus the other lotions that are allowed in the unit that they were accustomed to using at home. In this particular study*, we found that there was a difference between Remedy and other products, and that Remedy was able to reduce the erythema, which is the most problematic part of this whole hand damage. That was a very significant finding.

What kind of influence do you think this study can have?

The difference with intense treatment certainly makes the case for healthcare institutions to say, “Look, we now have data that this is helpful and we want you to incorporate this as part of the expectations of working here. Just like we expect people to wash their hands, we expect people to take care of their hands.”

And because we know that damaged skin has more bacteria on it, and that hands are a main hub for transmitting bacteria from one person to another, there’s certainly good reason to believe that this would help reduce infection. So, intense hand treatment really goes right to the heart of patient and healthcare worker safety. ■

* Visscher, M., Effect of Lotions and Creams on Irritant Hand Dermatitis in Health Care Workers, Cincinnati Children’s Hospital Medical Center