

# Can shower-baths be bad for your skin?

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How often can you enjoy a shower bath without harming your skin? This obviously simple question just cannot be answered with another simple sentence. Actually it can't be answered at all since it is wrongly asked. The following article shows why.

**S**hower taking and washing actually is not scheduled in Mother Nature's program. Given the opportunity, however, also other representatives of evolution enjoy a refreshing bath. Also our fauna welcomes a cleansing rain shower to get rid of dust and other substances that accumulated on the leaves. Since rain isn't always in sight, nature has developed other self-cleaning processes as for instance for humans by renewing the skin barrier within a few weeks or for leaf trees by shedding the leaves.

## Self-cleaning processes

The self-cleaning process happens on the quiet in a way that most of the people aren't even aware of it.

In natural surroundings animals shake their fur or take a bath in the sand which however is less intended for cleansing purposes but rather associated with getting rid of annoying parasites and the itching related to it. Every remedy counts here and in extreme cases even the help of friendly conspecifics is welcome to pick off the nuisance out of the fur and eat it. Such behaviour isn't only found with terrestrial animals but also with marine creatures, or in other words, big fishes enjoy the service of cleanser fish species on spots where they can't get to themselves.

Hence the above-asked question can be answered insofar that shower taking and washing have nothing to do with sanitary conditions. Just to stay in the animal context it could be added that a certain amount of hygiene is beneficial for health prevention purposes.

## Organisms of the skin barrier

The above-mentioned statement can also be questioned due to the fact that besides the renewal of the skin barrier, we also have auxiliaries composed of numerous microorganisms populating our skin that take care of the acid mantle and also impede external microorganisms to spread on the skin, penetrate it and then trigger infections.

With every cleansing process apart from a rinsing with plain water, we stampede this

symbiotic community. It needs to re-organise before strangers spread on the unprotected skin surface and get in competition. This also is the reason why the fungus infection we catch in swimming baths afflicts the body after the skin cleansing routine on the way to the locker rooms.

The risk is there, even without using soap, since the chlorine water has decimated the skin flora and additionally, since the skin swells and hence becomes more permeable. Seen from this perspective a cleansing is not beneficial but related to a risk. To compare it with the current corona situation: no mask, no distance but instead direct contact and a disordered barrier.

## Actually harmless, but...

Actually shower-taking is rather harmless as long it is limited to the use of pure water and finished after about five minutes. This, however, does not correspond with reality. Shampoo for the hair, a scented shower cream for body, axles and in the intimate area are the usual cleaning tools. The re-fattening substance contained in the products tightens the skin and replaces the body lotion. It just feels good and provides the objective safety needed for the interaction with other people. This often is not enough, though, since evenings we want to rinse off the challenges of everyday life and present us to the partner with a clean inviting body.

## Hygiene, hygiene, hygiene

What sounds like a gloss now, is a part of our culture that has been developing within centuries and is related to risks and adverse effects as mentioned before. Seen from a scientific perspective it sounds like a tightrope walk.

Hygiene is one of the prerequisites to allow this immense number of people to populate our earth. Too much of hygiene, however, is clearly detrimental to our health as the statistic reports regarding the number of people prone to neurodermatitis can prove. The problem starts shortly after birth and continues into toddler age when every possible kind of germ

is kept away and the natural immunizing process against external influences is impeded. Similar conditions apply for nutrition. Non-refined, natural food is the best precondition for the immunizing processes originating from the intestinal contract that support our health.

The real challenge here is to minimize the unavoidable adverse effects pertaining to our western way of life. This also involves that, whenever possible, we should take showers and baths without using cleansing agents. It should however be mentioned that this is insufficient in regions with hard water, or in other words, in regions where tap water contains calcium- and magnesium salts. Particularly persons with atopic skin should then install desalination devices as for instance ion exchangers however provide an outlet for drinking water. The reason for this measure lies in the fact that the minerals causing the hardness bind the few remained fatty acids which is harmful for a disordered skin barrier however essential for the formation and maintenance of bone substance.

### Cleansing agents

Persons who think that they absolutely need to use cleansing agents should keep in mind that the skin reacts to external irritations – such as for instance the removed lipid mantle - by intensifying its lipid synthesis. Hence it certainly is worthwhile finding out how an obviously fatty skin can be rebalanced to the individual, less fatty condition by gradually reducing the frequency and dosage of cleansing agents.

Admittedly this is not an easy task as it implies fighting against a habit which can be compared to changing eating habits and dieting. The chances for acquiring a healthy skin are increasing this way, though.

The question “how often can we take a shower without causing damage to the skin” should thus be changed into “how can I minimize damaging influences when washing or taking a shower”. And to resume the issue of the obviously indispensable cleansing agents, it also includes discussing their composition. It is not the price of the preparations that informs us whether the composition of a cleansing agent is good or bad for the skin but only the INCI, or in other words, the coding of the different components. This however is a mystery for many users and that is the reason why sales promotions can be so successful.

Accordingly, several criteria for ingredients are discussed in the following:

- Tensides alias emulsifiers should have a very low critical micelle concentration

(CMC) – whereas bothering lipid substances on the skin are emulsified and hence eliminated. The higher the CMC, the more effective is the cleansing agent but also the higher the potential for irritations.

- Re-fattening additives convey a wrong impression on the condition of the skin barrier since we are dealing here with surface-active substances or adhesive silicones. Substances with physiological benefits are comparably ineffective since the major part ends up in the plughole. Neither are such re-fattening substances suitable for subsequent cosmetic treatments.
- Among the cosmetic additives strong complexing agents such as EDTA are effective against the above mentioned minerals causing the hardness. On the other hand they also bind the heavy metals that are essential for endogenic and skin flora-relevant enzymes. Beyond that, they are non-degradable.
- The pH value of cleansing agents is a less crucial factor since the products only shortly remain on the skin and then are rinsed off. The value can be at or below pH 7. Products with a higher pH value have irritant effects as they bind the fatty acids of the skin barrier similar to the hardening minerals. The loss of fatty acids automatically triggers regenerative processes analogous to peeling treatments. Prior to these processes, however, external microorganisms have an easy job as described above.

### Conclusion

A lot of knowledge has been gathered around the issue of taking showers and washing. The whole trick is to avoid the factors that are bad for the health.

And a final clue: to prevent nail fungus, which is a widespread phenomenon among the elder generation, it is recommended to apply, possibly once a week, the non-prescription drug Terbinafin cream into the nail folds after taking showers. The preparation effectively inhibits the ergosterol synthesis of fungi and thus saves prolonged trouble following an infection.

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