

LAURASTAR 

HYGIENIC STEAM EFFECT

**KILLS 99.999%
OF BACTERIA AND MITES**

FOR INTERNAL USE ONLY



SWISS ENGINEERING | DESIGN

LAURASTAR 

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Introduction

Hygiene has been a subject of concern for centuries. While major progress was made in this field in the 19th and 20th centuries, it's worth asking about progress over the past 40 years.

Indeed, in the 1960s, with an increase in access to antibiotics, hygiene stopped being taught in schools. There was a paradigm shift and a focus on prevention gave way to an emphasis on cure. There are, however, a number of measures that can be taken to avoid infections. But these have simply been lost in recent generations.

But if we've become blasé about hygiene, there are nonetheless some microorganisms that are very dangerous in terms of public health. A 2018 report from the WHO presented a list of antibiotic-resistant bacteria and fungi resistant to antifungal drugs, something that has become a research priority.

Alongside the risk of infection presented by these bacteria, there is also a growing prevalence of allergies worldwide. In fact, they have been ranked as the world's 4th most common chronic illness by the WHO. In Europe, 30% of the population suffers from allergies (rhinitis, asthma, eczema, nettle rash, etc.) to varying degrees. It is estimated that by 2050, up to half of the population may be affected.

Our modern consumer mindset, which favours speed and efficiency, has had unexpected results. Awareness has been slow in coming, but measures to increase such awareness, and to boost prevention in a natural way, have taken centre stage, as a result of recent food crises and debates surrounding endocrine disruptors.

People become much more aware of this at the moment a baby enters the family: food, sleep quality, and products that come into contact with the skin are subjects that take on critical importance. Hygiene is part of the equation but some basic elements are left aside out of a lack of knowledge or information.

And yet daily hygiene activities have a very important effect on the well-being, skin, breathing and health of babies and their families.

In this context, clothing becomes something much more than just fashion. No other product comes into as much contact with the skin, and is pressed against it 24 hours a day. Clothing should not only beautify, it should also protect: protect against skin diseases and irritations, the development of allergies - especially in young children or those with weakened immune systems - and it should prevent unwanted smells.



LAURASTAR #PURIFY #BEAUTIFY

100% natural, 100% effective, 100% rapid

Laurastar Research has been working for nearly 40 years to pursue professional excellence in steam, to make clothes, and those who wear them, more beautiful. Created for elite fashion designers with professional dry cleaning technology, Laurastar Dry Microfine Steam (DMS) takes care of the beauty of fabrics. Its gentle action on the surface is just as effective when it gets deep into fibres. It has become a staple in maternity wards because of its hygienic qualities.

In 2017, Scitec Research SA, an independent research lab in Switzerland, demonstrated and proved the effectiveness of Laurastar when it comes to cleaning clothing. We invite you to discover this unique technology that has been designed for your clothes, your family's well-being and which is environmentally friendly.



1. Because hygiene is essential

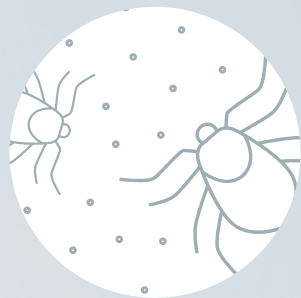
1.1. Why is hygiene so important?

Microorganisms lie at the origin of life and are thus vital. But although they have a positive side, they also transmit illnesses and allergies. This is what Lucretius wrote in 55 B.C. (*On the Nature of Things, Book VI*):

“Now I will discuss the cause of diseases and why suddenly pestilence can come with the force of a storm and ravage men and flocks and herds. First, there are, as I have already proven, multiple germs that are beneficial to life. But there are many others, which live in the air and bring disease and death. When, by chance, they are gathered together and infest the sky, the air becomes diseased. And all these illnesses, all these plagues come to us either from foreign lands by means of the sky, like clouds and mist, or they come from the earth itself, after the ground has undergone putrefaction as a result of driving rains or blistering sun.”

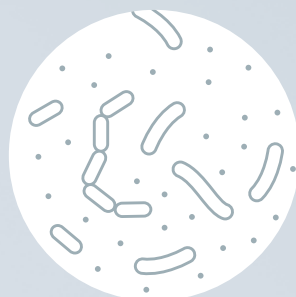
For centuries, outstanding progress has been made that has substantially increased life expectancy. But although daily life is easier, we've forgotten some of the advice our grandmothers used to give us. As a result, we've seen the growth of certain germs and allergens. Those most at risk are newborns, whose immune systems are still developing, young children when they go off to school and those who are immunocompromised, that is, people whose immune systems have been weakened.

What are they?



DUST MITES are parasites that are invisible to the naked eye. They like heat and humidity. They like to nest in homes and are particularly comfortable in duvets, curtains and teddy bears, which provide a favourable environment. A temperature close to 19°C allows them to develop and multiply. Humidity is also a factor that encourages their growth.

FUNGI: there are over 200,000 species of fungi. Among these, around 100 can affect people. Mycosis is one well-known ailment. When the skin and the nails are affected, we speak of superficial mycosis. Inversely, when the fungus is present in the blood and can affect any organ, the term is deep or systemic mycosis. Such cases are much more troubling, in particular when babies or people with weakened immune systems are affected.



BACTERIA: It has been calculated that 10^{12} bacteria live on a person's skin, 10^{10} bacteria live in a person's mouth and 10^{14} bacteria live in the intestine, which means that there are ten times as many bacteria cells as human cells in the human body. Most of these bacteria are harmless or even beneficial. There are, however, some pathogenic species, i.e., bacteria that can cause illnesses.

1.2. Allergies on the rise

The prevalence of respiratory allergies has increased considerably in recent decades. All of the epidemiological studies carried out at the end of the 1990s, both in Switzerland (*SAPALDIA*, *SCARPOL*^{*}) and in Europe (*ECRHS*^{*}) or internationally (*ISAAC*^{*}), have demonstrated that the prevalence of allergic diseases (rhinoconjunctivitis, asthma, eczema) has almost tripled over the last 30 years.

(Sources: SAPALDIA, SCARPOL, ECRHS and ISAAC studies)

In Europe and around the world, between 30 and 40% of the population is affected by allergies. Allergies are now the 4th most common chronic illness worldwide and the WHO estimates that one in two people will have an allergy by 2050.

Domestic allergens (dust mites, pet hair) are among the reasons for this rise. Indeed, changes to our lifestyle (TVs, home theatres, video games, internet, etc.) mean that individuals are increasingly sedentary and spend most of their time at home. This is particularly true for children and seniors.

In addition, changes to the way that we construct our homes (better insulation, widespread use of central heating, extensive use of carpets, smaller ventilation systems to save energy) are favourable to the growth of domestic allergens, particularly dust mites.

(Source: Division of Immunology and Allergy, CHUV, Lausanne, via internet - <http://www.immunologyresearch.ch/ial-info-pat-mal-allerg-respir-acariens-poussiere.htm>)

The SAPALDIA study points to changes in lifestyle. "Although, as far as allergic diseases are concerned, family history and genetics are the principal factor, such an increase in the prevalence of allergies, and in such a short period of time, cannot be explained by genetics alone. Environmental factors most likely play a determining role." According to a new survey carried out by the OpinionWay research company for the ALK lab, dust mite allergies have a very real impact on the daily life of those who are affected. In this large-scale survey involving 4,800 people throughout France, we learn that those who suffer from such allergies regularly experience symptoms that have a debilitating impact on their everyday lives: sneezing for 71% of those surveyed, runny noses (for 65% of respondents), itching sensations (61%) and red and/or puffy eyes (51%). Additionally, allergies to dust mites can be accompanied by difficulties breathing (45% of those surveyed), chronic coughing (36%) and wheezing (30%).





1.3. Does machine washing eliminate germs?

Washing machines can become breeding grounds for germs if certain precautions are not taken.

Professor Charles P. Gerba is a famous microbiologist at the University of Arizona. He's been working for a number of years on the bacteriological environment of the home and has carried out a number of studies on this subject. His work seeks to raise the general public's awareness of the role of microorganisms in environmental hygiene.

In particular, he has studied washing machines and the effect of temperature on the destruction of bacteria. The example of undergarments is quite interesting. He has demonstrated that bacteria are not eliminated if the temperature is too low and, what's more, they can even

contaminate clothing in subsequent washes by remaining in the drum of washing machines.

According to a study carried out by the Institut Pasteur and reported by Que Choisir, textiles washed at 30°C will contain only ten times fewer microorganisms than they did prior to being washed. To kill all bacteria, pasteurisation is essential. That means exposing bacteria to a temperature between 66 and 88 degrees for at least 30 minutes. Certain bacterial spores are resistant to pasteurisation and only sterilisation can kill them. Today, however, washing at low temperatures has become widespread, for reasons both practical and environmental.



To **save time**, a number of households do short washes at 30°C without sorting their laundry.



Synthetic and artificial fibres have gained in popularity over natural fibres **and often cannot be washed at temperatures above 30°C**. And as they don't need to be ironed to eliminate wrinkles, they are never rendered hygienic for those who wear them.



Low temperature washes consume less energy: a wash at 30°C can generate electricity savings of up to 40%.



There is also an entire category of clothing that cannot be washed and on which germs thrive, especially during winter.



"They originate in feces, and we found that 60 percent of the washing machines had coliform bacteria. We just went in and swabbed your washing machine," Gerba said. "And about 10 percent had E-coli in it." Next, Gerba and his researchers found that 40 percent of sterile cloths washed in non-bleach laundry contained fecal bacteria. "We found that when you did clothes with underwear in it, it contaminated all the laundry. In fact, there was enough left over to contaminate the next wash load," he said. Bacteria such as salmonella, which causes food poisoning, and viruses including hepatitis A and those most commonly causing childhood diarrhea, rotavirus and adenovirus, also were targeted. While E-coli was killed in the permanent press drying cycle, some salmonella survived on clothes that registered 131 degrees Fahrenheit (55°C).

(**Source**: *Evaluation of the Occurrence and Risk of Microbes in Laundry*)

1.4.

Breeding grounds for germs in the home

According to a study carried out by Professor Gerba, in addition to undergarments, discussed in section 1.3, the home has **7 breeding grounds for germs**.

*(Source: Hygiene expert Charles Gerba (aka Dr. Germ) runs down the germiest items in your living spaces.
By MARY JO DILONARDO - 21 August, 2017, 10:50 a.m)*

1

Pillows

Children's faces spend most of their time on these, and dust mites enjoy the heat and humidity. A typical person spends 25 years of their life asleep, which means 25 years with one's head on one's pillow. Additionally, each person loses between 0.5 and 1 litre of water a night, thereby generating humidity favourable for the development of germs.

2

Bath and kitchen towels

"The common occurrence of enteric bacteria in kitchen sponges and dishcloths suggests that they can play a role in the cross-contamination of foods, fomites and hands by foodborne pathogens. This study investigated the occurrence of bacteria in kitchen towels often used to dry dishes, hands and other surfaces in the domestic kitchen. A total of 82 kitchen hand towels were collected from households in five major cities in the United States and Canada and the numbers of heterotrophic bacteria, coliform bacteria, and *Escherichia coli* in each towel were determined. In addition, identification of the enteric bacteria was performed on selected towels. Coliform bacteria were detected in 89.0% and *E. coli* in 25.6% of towels. The presence of *E. coli* was related to the frequency of washing."

(Source: Charles P. Gerba,1 Akrum H. Tamimi,1 Sherri Maxwell,1 Laura Y. Sifuentes, 1 Douglas R. Hoffman2 and David W. Koenig2 1Dept. of Soil, Water and Environmental Science, University of Arizona, Tucson, AZ 85721, USA)*

3

Other sources of contamination revealed by Dr Gerba are:

Kitchen sponges

15% contain bacteria like *Salmonella* or *E. coli*. They should be replaced every week. *(Source: Charles P. Gerba)*

Sofas & cushions

are difficult to wash, especially when they have covers that can't be removed, and can rarely handle washes at 60°C or more.

The inside of cars,

especially those that regularly transport children.

Computers, telephones, tablets and hotel room remote controls,

which are rarely disinfected and used by a number of people.

Toys and stuffed animals

carried around inside at outside the home.

Domestic animals

can also carry microorganisms capable of causing illnesses among humans (which are then called zoonoses). We can find, for example, the bacteria responsible for gastroenteritis (e.g. *Salmonella*) in the digestive tract of domestic cats and dogs.

2. Laurastar, a scientific approach to Hygiene

SCITEC
Scitec Research SA

Laboratory accredited by:

SWISSmedic
Swissmedic

SWISS TESTING LABS
Association of Swiss Laboratories
Verband Schweizer Laboratorien
Association des Laboratoires Suisses
Associazione dei Laboratori Svizzeri

the Association of Swiss Laboratories



Swiss Accreditation



ISO 17025 standard



**Department
of Health**

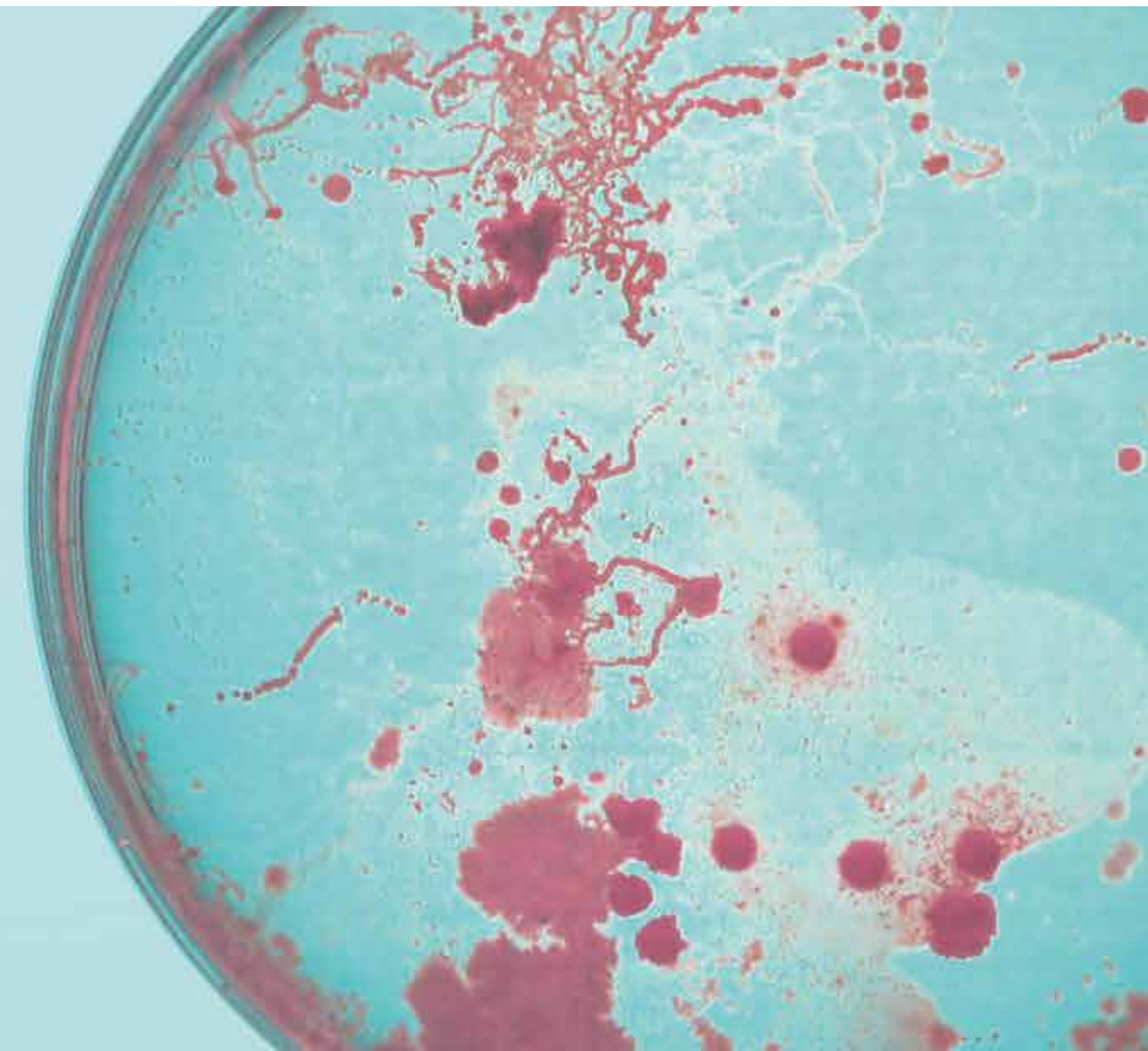
and is certified by the New York State Department of Health (NYSDOH)

2.1. Tests carried out by SCITEC RESEARCH SA, an independent research lab in Switzerland

To test the effectiveness of the hygienic steam used by ironing systems, Laurastar carried out a study on a number of types of microorganism. The organisms tested (bacteria, fungi and dust mites) are responsible for skin problems, infections and allergies.

The tests were done with both ironing systems and steam generators. The standard ironing time used in the study was defined after observing the ironing methods of typical users. It thus corresponds to the ordinary use of ironing systems.

The independent Scitec Research SA laboratory in Lausanne was chosen for its expertise in the microbiology of immunocompromised people, that is, people whose natural defences are weakened.



2.2. The choice of microorganisms studied & their pathologies

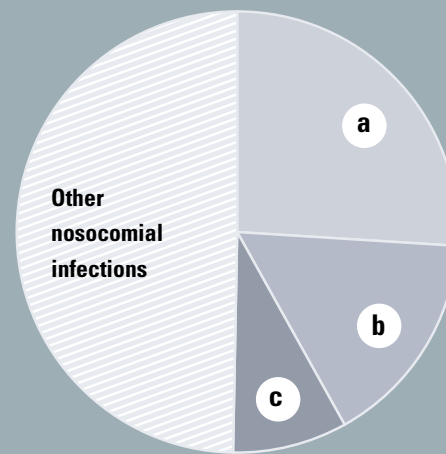
Scitec Research SA chose microorganisms recognised for their involvement in frequent infections and/or responsible for allergies.

In 2012, an InVS study showed that the three microorganisms most responsible for nosocomial infections were bacteria of the following type:

a) *Escherichia coli* (26 % of germs isolated)

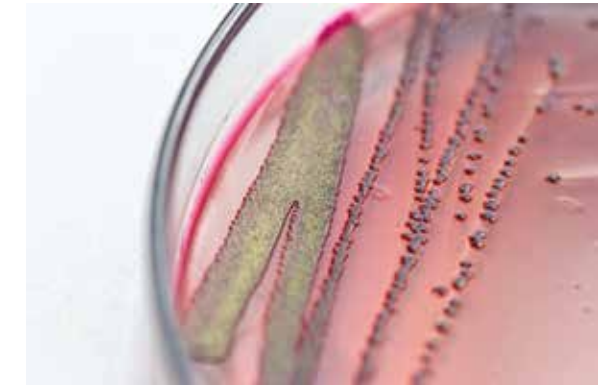
b) *Staphylococcus aureus* (15.9 %)

c) *Pseudomonas aeruginosa* (8.4 %)



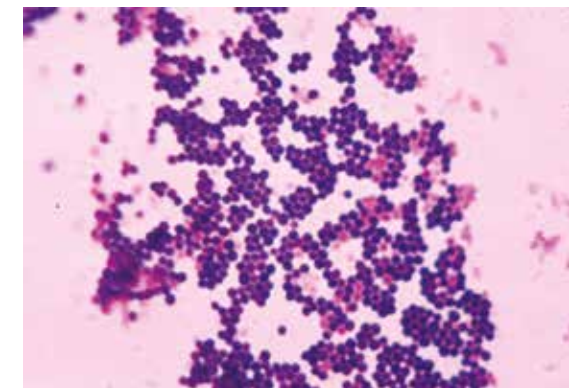
Three bacteria responsible for infections

"S. aureus is the leading cause of nosocomial bacteria in North America and Latin America, and the second leading cause of nosocomial bacteria in Europe." (Naber, 2009)



Escherichia coli

The bane of young parents whose children have started schooling, *E. Coli* is a bacterium responsible for a number of different infections, particularly food poisoning (or gastroenteritis), with symptoms such as abdominal pain, diarrhoea and fever. It can also be responsible for more serious illnesses such as meningitis or septicaemia. And it can also cause skin infections, although it does so at a much lower rate than *S. aureus*. (Evans & Evans, 1996).



Staphylococcus aureus

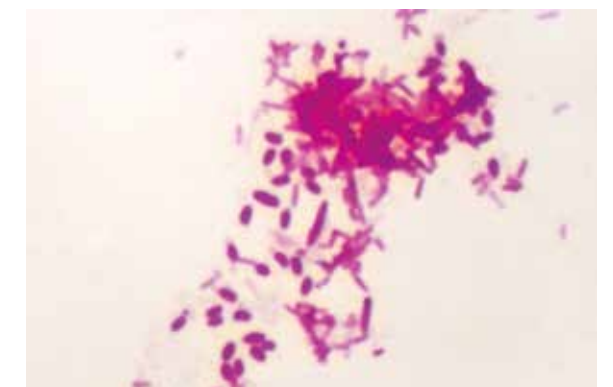
Also known as golden staph, *S. aureus* is a bacterium commensal with humans and can be an opportunistic pathogen in certain sites or in certain circumstances. Present all over the world, it is one of the most frequent causes of skin infections, soft tissue infections and nosocomial infections (Fridkin et al., 2005).

S. aureus is present in a number of places on the human body: nose, groin, armpits, mucous membrane, mouth, hair, etc. (Murray, Baron, & American Society for Microbiology, 2003).

S. aureus can cause skin infections, pneumonia, osteomyelitis, endocarditis, and is also responsible for cases of food poisoning (Government of Canada, 2012).

The number of infections due to *S. aureus* has increased continuously over the last twenty years.

(Tong, Davis, Eichenberger, Holland, & Fowler, 2015). Certain strains have developed a resistance to antibiotics, which has led to serious problems in hospitals (MRSA - National Library of Medicine, PubMed Health). *S. aureus* is a bacterium classified as resistant by the WHO. Contributing to its elimination is a major prevention priority. (Source: WHO, 2018)



Pseudomonas aeruginosa

This is a bacterium often involved in very serious nosocomial infections, where the mortality rate can reach 50% in immunocompromised patients. It is easily transmitted by water, air or contaminated surfaces. Infections caused by *P. aeruginosa* cause illnesses such as wound infections, eye infections, lung infections and meningitis. Moreover, this bacterium is highly resistant to antibiotics.

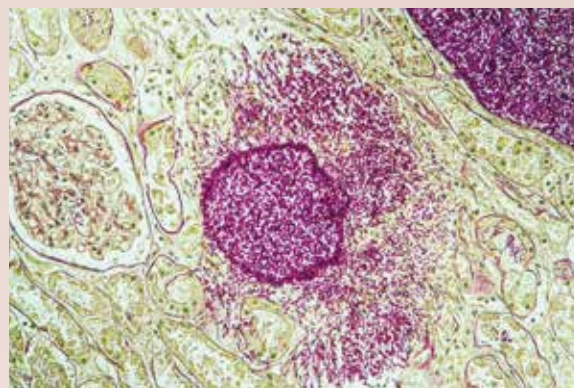


Candida albicans, a **fungus** responsible for mycosis

Among the 20 species of *Candida* that can cause infections in humans, *Candida albicans* (a type of yeast) is the fungus that provokes it the most. Moreover, *Candida albicans* is the fungus most frequently responsible for vaginal yeast infections, which affect 75% of adult women during their lives. ("Genital/vulvovaginal candidiasis (VVC)|Fungal Diseases|CDC") *C. albicans* is responsible for 80-90% of these vaginal infections, to which pregnant women are especially susceptible (because of a hormonal change that encourages the growth of the fungus). (Soong & Einarson, 2009). The skin infections that it causes have the following symptoms: red blotches, rashes and infections of hair follicles (Mayer; Wilson, & Hube, 2013), ("Candida infection of the skin - Penn State Hershey Medical Center"). The formation of a biofilm by *C. albicans* reduces the effectiveness of some antifungal drugs, leading to the problem of resistance to medication and increasing the need to prevent this type of infection. (Douglas, 2003)

Responsible for
Thrush
in young
children.

Many types of fungi live on the skin, nails and hair of humans and can cause a number of different illnesses (mycosis) of varying degrees of severity.



Dermatophagoides pteronyssinus, a **dust mite** responsible for allergies

Living conditions have changed a lot in the last forty or so years. Housing today features better insulation and more heating. Unfortunately, this is favourable to the proliferation of dust mites. These creatures can cause allergies leading to asthma, rhinitis or eczema. 1 out of every 2 people with an allergy is allergic to dust mites.

More specifically, dust mites (particularly *D. pteronyssinus*) are an aggravating factor for people who suffer from atopic dermatitis, an allergic condition that affects the skin and causes itchiness and eczema.

Contact with allergens present in the environment plays a big role in this illness that affects up to 20% of children and 3% of adults (Nutten, 2015, pdf 21-24, swiss-paediatrics). The prevalence of this condition is only increasing. *D. pteronyssinus* is the most widespread species of dust mite and is found all over the world.



2.3. Results show that Laurastar Dry Microfine Steam (DMS) eliminates microorganisms for the long term

The study carried out by the Scitec Research SA laboratory demonstrated that Laurastar DMS naturally and lastingly eliminates harmful microorganisms, without the use of any added chemicals.

Indeed, the results showed:

1

THE ELIMINATION after ironing of:

99.999% of bacteria

100% of dust mites

99.99% of the fungus *Candida albicans*.

2

A LASTING HYGIENIC EFFECT since the microorganisms do not reappear in the 24 hours following the use of DMS on textiles. As the steam is dry, which will be explained later, the fabrics are themselves left perfectly dry, leaving little chance for microorganisms to breed.

The hygienic effect of Laurastar DMS thus makes it possible to thoroughly clean clothes without the addition of chemical products.

D | M | S
DRY MICROFINE STEAM

**HYGIENIC
STEAM
EFFECT**

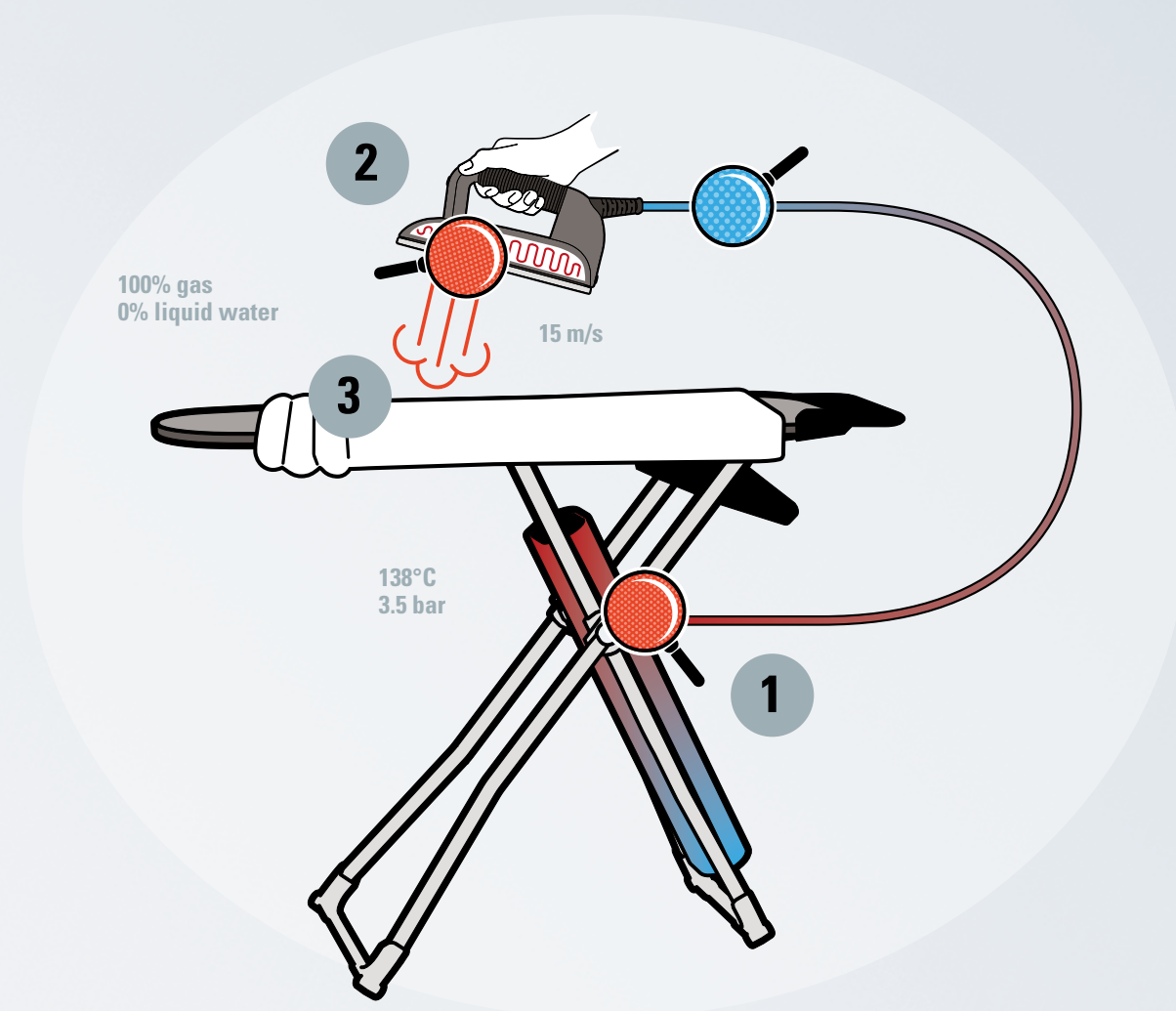
**KILLS 99.999%
OF BACTERIA AND MITES**

3.

Results made possible by technology and steam exclusive to the brand

Making technology available to individuals that had previously only been meant for professionals has been Laurastar's mission for almost 40 years. With Laurastar DMS (Dry Microfine Steam), the brand's ironing systems and steam generators are comparable to professional systems.

This steam is generated in three steps.



3.1. Steam under pressure in the heater

Laurastar steam is born in the boiler. It is heated to **138°C** with a pressure of **3.5 bars**, then transmitted to the iron by means of a tube. By superheating the water to over **100°C**, the steam transformed into gas first accumulates thermal energy. This procedure furthermore creates a kind of distillation, ensuring that only the water emerges from the heater, leaving impurities behind.

3.2. Transformation into DRY STEAM as it leaves the iron

Travelling down the tube, the steam cools, turning into vapour.

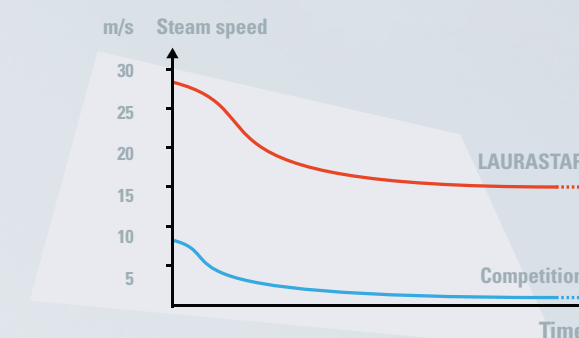
That's why it's heated a second time.

In fact, as it arrives in the hot iron, the vapour follows a **50 cm** pathway, which slows it down and reheats it again. It is then transformed into microfine water molecules in a gaseous state.

The vapour has now been transformed into steam. We call it dry because it no longer contains any water in liquid form. It can be described as expansive because its volume is **1,600 times** greater than it is in its liquid state.

3.3. Diffusing of MICROFINE STEAM & penetrating deep into clothing

The dry steam finally exits from the holes on the bottom of the iron, which transform the pressure into a speed of **15 m/s**, thereby providing the water molecules that have been changed into gas with exceptional energy. The small water molecules thus easily pass through the textile, transferring to fibres the heat and energy they accumulated on their journey.



Steam leaves competing generators at a speed of 1 m/second. LAURASTAR **DMS** sets itself apart here by its far superior power, which is at the root of the professional-level effectiveness of its products.

The power of steam is proportional to two factors: pressure and speed:

- As the speed of DMS is **15 times higher** than other products on offer, it's this aspect that really allows LAURASTAR DMS to stand out from the standard irons one can find on the market.
- The pressure of appliances is often indicated on labels. But this measures what goes on inside the boiler, and has very little effect on what happens to the steam as it leaves the iron.

D|M|S

DRY MICROFINE STEAM

15x more powerful

Thanks to the professional iron, **DMS** is diffused **15 times faster** than other steam generators, thereby providing the water molecules transformed into gas with exceptional energy. They then easily pass through the textile, transferring their accumulated heat and energy to the fibres and eliminating **100%** of dust mites and **99.999%** of bacteria.

100% gas

As it leaves the iron, **DMS** does not contain a single molecule of water in its liquid state. It leaves fabrics perfectly dry, preventing microorganisms from breeding.

1,600x more volume

Water **heated to twice** its boiling point is transformed into **Dry Microfine Steam**. It then acquires **1,600 times more volume at 138° C** than liquid water, ensuring effective diffusion in a single movement, all while treating textiles with delicacy and leaving them looking fuller.

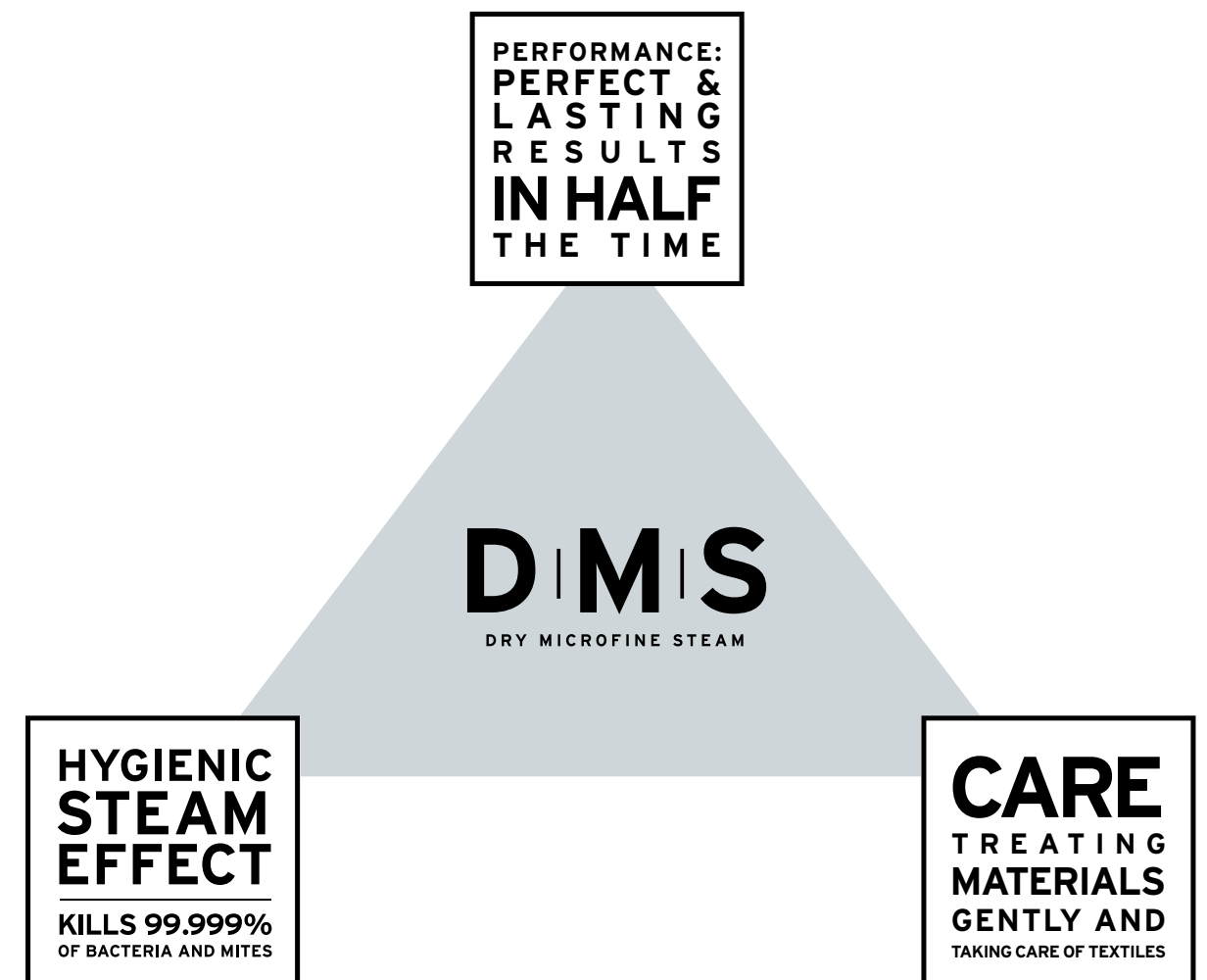


4.
#BEAUTIFY
#PURIFY
YOUR LIFE

Inventing means using your intelligence to reach a goal

Laurastar's goal is to make beautiful clothes accessible to everyone. Beyond the ease of use and high quality of ironing that Laurastar has long been recognised for, this study made it possible to demonstrate the superiority of Laurastar's technology in terms of hygiene and environmental friendliness.

Laurastar DMS thus combines three benefits that serve as the foundation for the brand's promise: Beautify and Purify your life.



4.1. #PURIFY: Hygiene as a major benefit

As this study has shown, Laurastar DMS effectively and lastingly eliminates microorganisms, without the need of chemical processes.

For daily life that's hygienic and environmentally friendly

For the clothing of babies and children, it's a solution that's perfectly adapted, in particular, for all of the textiles that come into contact with your child's skin (*bedding and undergarments*) and also for the stuffed animals and comfort blankets that have taken up residence in their beds.

For delicate textiles that can't handle washes above 40°,

it's the only natural and effective solution to eliminate pathogenic organisms all while taking care of your clothing. This is true above all for items like undergarments and winter scarves.

For materials and textiles that can't be washed frequently, if at all,

making them hygienic with Laurastar steam is an act of prevention, especially after a day spent in school or on public transportation.

For non-iron clothes,

using Laurastar steam will ensure that they are rendered hygienic.

Technology that's recognised by healthcare professionals

For over 30 years, **SWISS MATERNITY WARDS** have been using Laurastar systems to iron and ensure the hygiene of clothes provided for newborns. Easy to use in an everyday context, they have become the standard in this environment, a use that could expand to all environments where there is contact with people with weakened immune systems.



“ In my job hygiene's really important. I've been in this maternity ward for 15 years now, and all of the baby clothes that we lend to mothers are systematically rendered hygienic after steaming with a Laurastar iron.

Isabelle, midwife



Products with the “Allergy UK” seal of approval

Laurastar products have received the “**Allergy UK**” seal of approval, granted by top-ranking specialists and professors and certifying that these products are effective for people with allergies, sensitivities and intolerances. “The seal of Approval demonstrates that the endorsed products have been independently scientifically tested and proven to reduce allergens, by an independent laboratory to protocols written by leading allergy specialists and professors, specifically to benefit people affected by allergy, sensitivity and intolerance.”

4.2. #BEAUTIFY: Performance & care to make clothing beautiful

PERFORMANCE

perfect and lasting results in half the time

The power of Laurastar DMS makes it possible to have perfect results in a single movement. Passing through textiles thoroughly and effectively, it ensures that all of a garment's textile fibres fall into place, making good on its ambitious promise to deliver perfect results in half the time and winning over fashion professionals in the process.

What's more, most irons on the market diffuse a vapour at a temperature that's too low, becoming wet mist.

This wet vapour creates condensation in fabrics. This has two consequences:

- an invisible consequence is that microorganisms are allowed to proliferate
- a visible consequence is that clothing quickly becomes creased again, as fibres have not been set in place

This is how shirts that have been “ironed” become wrinkled again soon after they're placed in the closet.

Laurastar technology continuously produces **100% high-temperature steam** that's safe for users. This prevents the steam from condensing immediately upon contact with air or cold surfaces like fabrics.

Laurastar DMS thus does not leave fabric damp, and fixes fibres in place so that your clothes are perfectly ironed and thoroughly cleaned.

CARE

Treating materials gently to preserve their original beauty

Laurastar brings its experience to withstand daily use so that users can take care of the clothes that they love and ensure that their original beauty is preserved every day.

That is how LAURASTAR DMS **naturally restores the volume** of all textiles, even those that are the most delicate, like wool and angora. All non-iron and non-washable clothes, like suits and blazers, can rediscover their original beauty without any need to go to the dry cleaner's.

“ Because of the complexity of these clothes and that they are so finely made, you don't want to send them to the laundry, you want to do it at home. And with this steam, it's brand new again.

Just perfect. Laurastar, I love it !

Naeem Khan, Fashion designer

Singapore Fashion week, 2016



Conclusion

Because beauty comes from within, a kind of balance between the visible and invisible, Laurastar has spent years working on how to gently treat fibres to best bring out the beauty that lies hidden inside.

This technology, designed for creators and beautiful materials, offers new well-being perspectives all while treating clothes, and those who wear them, with the respect they deserve and doing so in an environmentally friendly way.

The main conclusions of the expert report summarised here shine a light on the high performance of **LAURASTAR DMS** both on the outside and the inside of fibres.

Day after day, it takes care of your clothing, even the most fragile and precious items, with a concern for aesthetic qualities and hygiene, with appliances built to last and that will be by your side every day, and in all of life's important moments.

#BEAUTIFY, #PURIFY YOUR LIFE,

By LAURASTAR

“ **Elegance** is when the inside is as beautiful as the outside.

Coco Chanel

”



With its products and almost 40 years of experience, Laurastar is proud to reflect the values of quality, precision and aesthetics that have made Switzerland respected worldwide for its excellence.



PREVENTION ADVICE FOR YOUNG PARENTS

Because an ounce of prevention is worth a pound of cure, here is some advice for young parents.

+ WASH YOUR HANDS

before and after touching your baby, but also while handling laundry: 80% of germs are spread from the hands. Washing your hands and those of your child makes it possible to stop the spread of infectious agents.

+ AIR OUT

open your windows at least once a day, preferably in the early morning, so as to maintain the right level of humidity in the air.

+ CHOOSE

clothing and textiles that are made from natural fibres (*cotton, linen, etc.*), particularly for babies but also for any kind of clothing that is in contact with the skin.

+ SORT YOUR LAUNDRY

based on temperature and colour indications. Don't overload your machine.

+ WASH AT HIGH TEMPERATURES

(*60° minimum*) sheets, pillow cases, onesies, bathroom linen, kitchen linen and undergarments.

+ DRY

your laundry immediately after washing to limit the proliferation of residual microorganisms.

+ LOOK AFTER

the drum of your washing machine and air out the machine regularly. A 90° empty wash once a month will allow you to eliminate residual germs and limit the proliferation of microorganisms and contaminations from one wash cycle to another.

+ CHANGE

your bathroom linen, towels, bedding and kitchen linen regularly.

+ ENSURE THE HYGIENE OF

your textiles washed at low temperatures (*30 – 40°*) by using hygienic Laurastar Dry Microfine Steam (DMS)

+ DO NOT LET

your pets sleep in your bed or your child's bed and avoid, as much as possible, letting them into bedrooms. Wash your hands after touching animals.

+ SYSTEMATICALLY WASH

new clothes, and make them hygienic by using Laurastar Dry Microfine Steam to eliminate the contaminants accumulated during their manufacture, transportation, storage and handling.

Bibliography

Rapport Interne Hygienic Steam Report / Laurent Rochat. (2017)

***Bacillus cereus*, a volatile human pathogen** / Bottone, E. J. (2010). Clinical Microbiology Reviews, 23(2), 382–398.

<https://doi.org/10.1128/CMR.00073-09>

Candida infection of the skin / Penn State Hershey Medical Center. (n.d.). Retrieved 23 June 2017

<http://pennstatehershey.adam.com/content.aspx?productld=117&pid=1&gid=000880>

Candida biofilms and their role in infection / Douglas, L. J. (2003). Trends in Microbiology, 11(1), 30–36

***Escherichia Coli* in Diarrheal Disease** / Evans, D. J., & Evans, D. G. (1996). In S. Baron (Ed.) Medical Microbiology (4th ed.).

Galveston (TX): University of Texas Medical Branch at Galveston

<http://www.ncbi.nlm.nih.gov/books/NBK7710/>

Methicillin-resistant *Staphylococcus aureus* disease in three communities / Fridkin, S. K., Hageman, J. C., Morrison, M., Sanza, L. T.,

Como-Sabetti, K., Jernigan, J. A., Active Bacterial Core Surveillance Program of the Emerging Infections Program Network. (2005).

The New England Journal of Medicine, 352(14), 1436–1444.

<https://doi.org/10.1056/NEJMoa043252>

Genital / vulvovaginal candidiasis (VVC) / Fungal Diseases | CDC. (n.d.). Retrieved 26 January 2017

<https://www.cdc.gov/fungal/diseases/Candidiasis/genital/>

***Staphylococcus aureus* - Pathogen Safety Data Sheets** / Public Health Agency of Canada, Government of Canada, P. H. A. of C. (2012, April 30).

Retrieved 4 January 2017,

<http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/staphylococcus-aureus-eng.php>

House dust mites in the etiology of allergic diseases / Henszel, Ł., & Kuźna-Grygiel, W. (2006). Annales Academiae Medicae Stetinensis, 52(2),

123–127.

Fungal allergens / Horner, W. E., Helbling, A., Salvaggio, J. E., & Lehrer, S. B. (1995). Clinical Microbiology Reviews, 8(2), 161-179.

***Candida albicans* pathogenicity mechanisms** / Mayer, F. L., Wilson, D., & Hube, B. (2013). Virulence, 4(2), 119–128.

<https://doi.org/10.4161/viru.22913>

Manual of clinical microbiology / Murray, P. R., Baron, E. J., & American Society for Microbiology. (2003). Washington, D.C.: ASM Press.

Atopic Dermatitis: Global Epidemiology and Risk Factors / Nutten, S. (2015). Annals of Nutrition and Metabolism, 66 (Suppl. 1), 8–16.

<https://doi.org/10.1159/000370220>

National Library of Medicine / PubMed Health. (n.d.). MRSA. Retrieved 4 January 2017,

from <https://www.ncbi.nlm.nih.gov/pubmedhealth/PMHT0025827/>

Microbiologie / Prescott, L. M., Harley, J. P., & Klein, D. A. (2003). De Boeck Supérieur.

Disinfection and sterilization: An overview / Rutala, W. A., & Weber, D. J. (2013). American Journal of Infection Control, 41(5), S2–S5.

<https://doi.org/10.1016/j.ajic.2012.11.005>

Vaginal yeast infections during pregnancy / Soong, D., & Einarson, A. (2009). Canadian Family Physician, 55(3), 255–256.

***Staphylococcus aureus*. (n.d.)** / Retrieved 23 June 2017,

http://www.antimicrobe.org/sample_staphylococcus.asp

Thermal Inactivation of Microorganisms. (n.d.) / Retrieved 4 January 2017,

<https://ncbi.nlm.nih.gov/labs/articles/24564593/>

***Staphylococcus aureus* infections: epidemiology, pathophysiology, clinical manifestations, and management** / Tong, S. Y. C., Davis, J. S.,

Eichenberger, E., Holland, T. L., & Fowler, V. G. (2015). Clinical Microbiology Reviews, 28(3), 603-661.

<https://doi.org/10.1128/CMR.00134-14>

WHO / World Health Organization. (n.d.). Retrieved 23 June 2017, Inserm

<https://www.inserm.fr/information-en-sante/dossiers-information/allergies>

