

ON THE GO WITH GROWTH HORMONES_E

by Uwe Diegel



medactiv
transforming lives

ABOUT THIS GUIDE

Traveling with growth hormones is always a little tricky. Especially that growth hormones are for children, who are not always conscious about the importance of taking their medication on time and under the right conditions. Growth hormones are fragile and expensive, so it is absolutely essential that you find the right solution for the right type of travel. There is not one universal solution for all types of travels and situations, but rather several complimentary solutions that can be used depending on what kind of trip you take.

Growth hormones are used to treat:

- children who are not growing because of low or no growth hormone.
- children who are short (in stature) and who have Noonan syndrome or Turner syndrome.
- children who are short (in stature) because they were born small and have not caught-up in growth by age 2 to 4 years.
- adults who did not make enough growth hormone when they were children or when they became adults.

This guide to traveling with growth hormones was developed by Uwe Diegel with a team of specialists and international medical consultants. We try to provide you with information that is factual and current. If you have any comments/suggestions/questions about travelin with growth hormones, please login to our Facebook page (<https://www.facebook.com/lifeinatimeline> (don't forget to like us)) or visit us on www.lifeina.com.

ABOUT UWE DIEGEL

Uwe Diegel (born 1965 in New Zealand), is a specialist in various forms of medical diagnostics such as blood pressure, temperature, asthma and diabetes. He is the holder of several patents relating to temperature and blood pressure measurement. Until the age of 26 he was a concert pianist. Following an accident that partially restricted movement in in right arm, he started a new career in medical diagnostics.

Serial entrepreneur, he entered the world of medical diagnostics in 1992, quickly developing a particular interest in cardiovascular diagnostics. His intense scientific curiosity has led him not only to develop new technologies in this field, but also to interest himself to field of medical manufacturing, industrial design and problems faced by Chinese manufacturing concerns.

Uwe lives in Paris, France, where he runs HealthWorks Global and does fundamental research in blood pressure diagnostics. He is today considered to be a foremost expert in the field of blood pressure management and in the manufacturing of medical diagnostics devices.

In 2009, Uwe gets interested in connected health as a means of providing better patient management. He becomes involved in iHealth, a platform that takes all the signals of the body and translates them into a meaningful format using smartphones and tablets. Uwe serves as CEO of iHealthLabs Europe until 2016. He leaves iHealth in 2016 to launch Lifeina, a company dedicated to developing new solutions for the safe transport of medication.

Uwe Diegel has been at the forefront of international changes in healthcare technology for the last 30 years. His drive and passion for innovative technology have driven major changes in perception about healthcare. He has driven the manufacturing of medical devices to new horizons by forcing new practices in manufacturing and innovation. An internationally recognised expert in the management of cardiovascular disease and diabetes, he is continuously looking for better solutions to improve outcomes for patients. He has for the last few years spearheaded the dissemination and acceptance of connected health as a tool for providing better solutions for patients.





« A journey of a thousand miles begins with a single step »

Lao Tseu

ON THE GO WITH GROWTH HORMONES !

GROWTH HORMONE TREATMENT, WHY AND HOW...

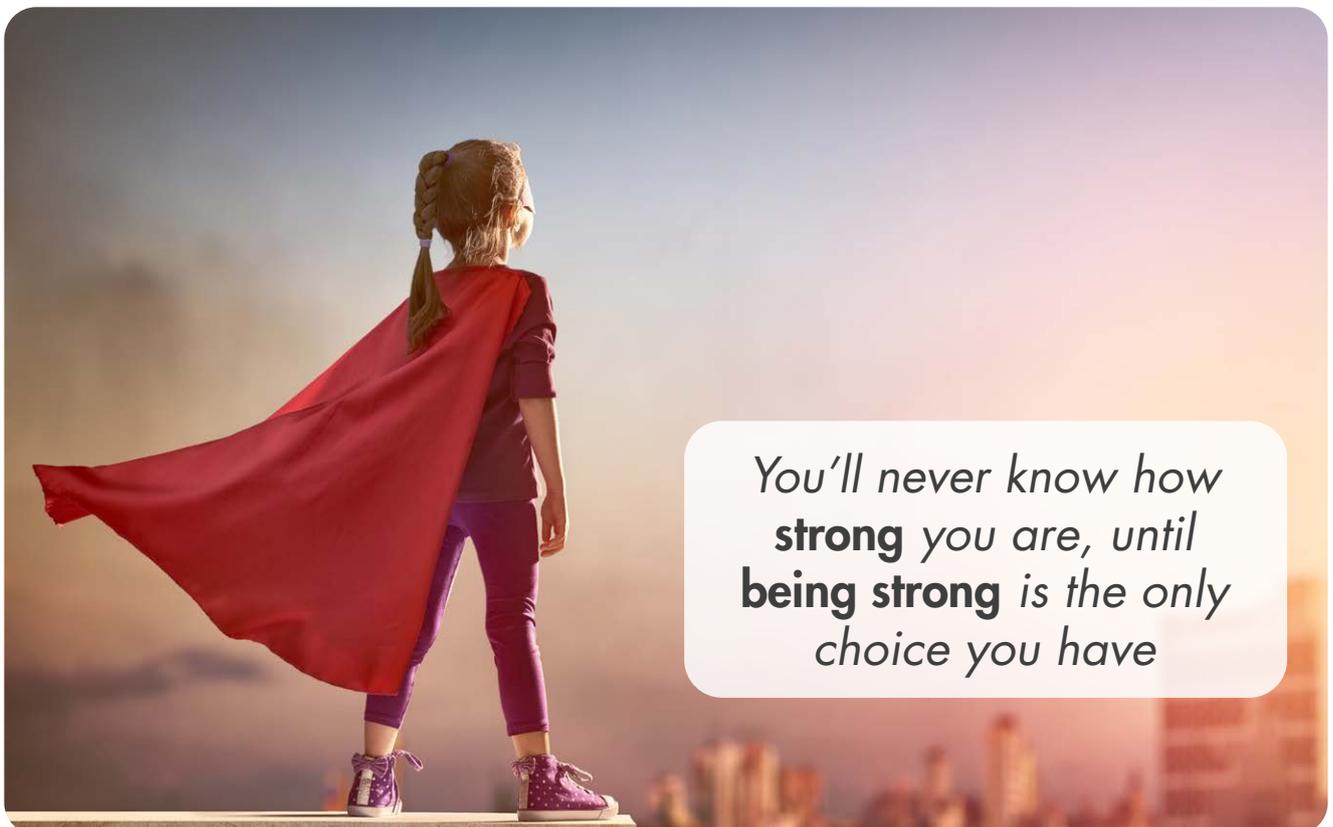
Growth hormone injection treatment is prescribed for children who have been diagnosed with growth hormone (GH) deficiency and other conditions causing short stature.

A number of other tests must be conducted first to confirm GH deficiency, Turner Syndrome, or other conditions for which GH therapy is indicated. These tests may include stimulation tests, MRIs, and x-rays.

GH treatment has few side effects and is a safe, effective way to treat growth hormone deficiency, Turner Syndrome, and a few other conditions associated with short stature.

HOW GROWTH WORKS

In order for a child to grow, a gland deep inside the brain, called the pituitary, must release enough growth hormone (GH). Natural growth hormone is released during deep sleep. Many factors influence the release of GH, including nutrition, sleep, exercise, stress, medications, blood sugar levels, and other hormones present in the body.



*You'll never know how
strong you are, until
being strong is the only
choice you have*



When a child's body does not produce or release enough GH, he or she may have several symptoms, the most noticeable being slow or no growth or facial features that make the child look a lot younger than his or her peers. Although being small has no effect on a child's intelligence, it may cause self-esteem issues and interfere with the development of mature social skills. For that reason, GH treatment may be prescribed to help a child reach his or her fullest growth potential—both in height and in personal development.

HOW GROWTH HORMONE TREATMENT WORKS

Once a child has been diagnosed with GH deficiency, Turner Syndrome, or other conditions treatable with GH therapy, the pediatric endocrinologist will discuss the pros and cons of, and usually recommend, GH therapy. The GH used in treatment is manufactured in the laboratory to be identical to that produced by the pituitary gland, so it is safe and effective. GH is given through a subcutaneous injection, which means that it goes into the fatty tissue just beneath the surface of the skin. GH can be given by a special injection device that looks like a pen. Because it is such a shallow injection, the needle is very small and does not hurt much at all.

WHAT TO EXPECT WITH GROWTH HORMONE TREATMENT

The main thing to expect is growth! Although it takes about 3 to 6 months to realize any height differences, the important thing is that your child will grow — probably 1 to 2 inches within the first 6 months of starting treatment. There may be a few other things you notice:

- Your child may outgrow his or her shoes quickly. Foot growth may occur within 6 to 8 weeks, so you may have to buy new shoes more often.

- Your child may want to eat more. An increase in appetite is common, especially if he or she had a poor appetite before treatment.

- Your child may look skinnier for a while once height growth starts. An increase in lean body mass and decrease of fat mass are common with GH treatment.



*"The future depends
on what we do in the
present."*

Mahatma Gandhi

It may take a number of years for your child to reach his or her adult height, so you should be aware that GH treatment is often a long-term commitment. Routine visits with the pediatric endocrinologist will be needed, as will periodic blood tests and x-rays to monitor your child's



progress on the treatment. Although the length of treatment varies, your child probably will have to stay on GH treatment until he or she has:

- Reached his or her full adult height
- Reached full bone maturity
- Grown less than 2 cm in the last year

GETTING AND GIVING GH INJECTIONS

GH injections are quick and almost pain-free, so children ages 10 and up may be able to and often prefer to give themselves their own injections. It is important that a parent supervises the injection to make sure the child gives the correct dosage each day. Parents should give the injections to younger children. Because natural growth hormone is released mainly during sleep in children, GH treatment is more effective when taken at bedtime.

Learning how to give GH injections may sound intimidating at first, but once you and your child get used to it, it becomes just another daily habit. There are, however, some tips that you should know when you start GH therapy:

TIME OF DAY

- Give GH at night, preferably within an hour of sleep. Try to give it consistently within an hour timeframe, for example between 9 and 10 p.m. every night. You may change the time occasionally, by a few hours earlier or later, but do not give before 5 p.m, except under unusual circumstances (such as leaving for a trip, a sleep-over, etc.)
- Do not make up missed injections.
- For best results, try not to miss more than once per month.

INJECTION SITES

- Use 4 of the 8 possible injection sites and rotate them each time. The sites are back of arms, top or outside of thighs, sides of belly, and outer quadrant of buttocks.
- Document the site used nightly on a calendar.
- Document when you open a new cartridge to keep track of expiration dates and how many injections have been used out of each cartridge.

FINISHING A CARTRIDGE

Because GH is very expensive, you should use up all of the medication in every cartridge. Pens will only allow you to dial to what is left of the medication. Use up the last of it and start a new cartridge by doing a second injection with the amount missing.



It is sometimes a bit harder for children using growth hormones. But do not despair, with a bit of courage, determination and with the help of your friends and family, the world will still be beautiful





*"It is only in the heart that one can see rightly,
what is essential is invisible to the eye"*

Antoine de St Exupery

LOOK FOR SIMPLE SOLUTIONS...

You may have to use up cartridges about once a week or so. If there is less than 0.2 mg left in the old cartridge, or if you are missing less than 0.2 mg of the last injection, do not give an additional injection.



OTHER MEDICATIONS

Since GH does not interfere with other medications, it can be taken even if your child is mildly ill (colds, flu), unless your PCP tells you to stop.

POSSIBLE SIDE EFFECTS

Although infrequent, there are some possible side effects that you should be aware of. They are:

- Allergic reaction, including swelling at the injection site, rash, or hives

- Hip, knee, or other joint pain
- Headache
- Progression of spine curvature in patients with scoliosis
- Temporary increase in blood sugar levels, which stops when the GH treatment stops

If the headache is persistent or severe, however, call your doctor immediately.

INSURANCE COVERAGE

GH is sold under a number of different prescription brand names, but all of them contain the same medication. Which brand name your child will use, and the shape and color of the pen that delivers the medication, will depend upon your medical insurance.

GH INJECTION TRAINING

As soon as your child's GH starter kit arrives, call your endocrinology clinic to schedule your family's GH injection training session. Your child and both parents or guardians should attend the training sessions before your child can begin GH treatment. At the training session, the nurse consultant will teach you and your child how to:

- Care for the medication
- Recognize the side effects
- Practice with the demonstration model of your child's brand of pen and
- Give a real GH injection



GH STORAGE

- GH must be refrigerated at 2 to 8°C (36 to 42°F); letting it get too hot or too cold will decrease its effectiveness.
- If left out overnight, you may place it back into refrigerator and continue to use it.
- When traveling, keep it in the cooler provided in the starter kit for up to 10 hours, then put on ice after 10 hours. Be careful not to place GH pens directly in ice — keep them separate by placing pen in a Ziploc bag.
- A good option for storage is to use the LifeinaBox, (www.lifeina.com) a miniature fridge that can be plugged in permanently to keep your GH at the right temperature.

X-RAY EFFECT ON GROWTH HORMONES

So far, contrary to urban legends, there are no conclusive studies that demonstrate that X-rays will adversely affect growth hormones. It should be no problem whatsoever to pass your growth hormones through the baggage X-Ray machines. However, it is no problem whatsoever to ask for a visual inspection rather than an X-Ray. They are quite use to it.

INTERNATIONAL GUIDELINES

The guidelines from the Transportation Security Administration (TSA) state the following:

“All medications in any form or type (for instance, pills, injectables, or homeopathic) and associated supplies (syringes, Sharps disposal container, pre-loaded syringes, jet injectors,

pens, infusers, etc.) are allowed through the security checkpoint once they have been screened. Medications should be labelled so they are identifiable.

Medications in daily dosage containers are allowed through the checkpoint once they been screened.

Medication and related supplies are normally x-rayed. However, as a customer service, TSA now allows you the option of requesting a visual inspection of your medication and associated supplies.

You must request a visual inspection before the screening process begins, otherwise your medications and supplies will undergo x-ray inspection.

If you would like to take advantage of this option, please have your medication and associated supplies separated from your other property in a separate pouch/bag when you approach the screener at the walk-through metal detector.

Request the visual inspection and hand your medication pouch/bag to the screener.

In order to prevent contamination or damage to medication and associated supplies and/or fragile medical materials, you will be asked at the security checkpoint to display, handle, and repack your own medication and associated supplies during the visual inspection process.

Any medication and/or associated supplies that cannot be cleared visually must be submitted for x-ray screening. If you refuse, you will not be permitted to carry your medications and related supplies into the sterile area.”



PREPARING FOR AIR TRAVEL...

HOW MANY GH PENS SHOULD I TAKE?

Before you leave on your trip, always calculate how many pens you will need by dividing the number of milligrams in your pen by your daily dose. For example, if you have a 15 mg pen and your daily dose is 1.25 mg, the pen will last 12 days.

Be sure to take all the necessary medication, needles, and supplies for the duration of your planned trip. This is especially important when you travel internationally, as many countries may not have the medication or supplies you need



With a bit of good cheer and preparation, you can go anywhere, any time. And it might also be a good idea to learn a few words, such as "growth hormones" in the country where you are going.

Get a letter from your physician on his letterhead that states:

"[Your name and address] is a patient of mine who suffers from a growth disorder that requires, and for whom I have prescribed on a continuing basis, the use of FDA approved recombinant (biosynthetic) growth hormone (rGH). rGH is made from fragile proteins that can be destroyed by temperatures outside the range of 2 to 8°C (36 to 46 degrees °F) for more than a few minutes at a time; and, therefore, is carried in a cooling pack or a miniature refrigerator. The rGH may be contained in a vial accompanied by syringes and needles, or in cartridge accompanied by pen and into which it is inserted, which is contained in a carrying case, and needles. rGH may also be degraded or destroyed by the x-rays emanating from airport person and luggage scanners. Because of those factors and the medical necessity for daily use of the rGH, it (vial or cartridge) must not be scanned with x-ray, hand checked, and remain with the patient during travel. " [Signed by physician; make sure you have the address and telephone number of the physician if it is not on the letterhead].

You can download a ready-made Travel Certificate on the www.lifeina.com website and get your doctor to sign it.

Take copies of your prescription or any other authorization for its use.

Carry with you collapsed outer packaging and any prescription information thereon that identifies the growth hormone and you as the patient or parent and intended recipient of the growth hormone.

Carry with you picture identification that identifies you as the patient or parent and intended recipient of the growth hormone.



I took GH as a child, and it turned out great...



MEDICAL CERTIFICATE

Doctor _____

Address _____

Tel _____

I, the undersigned, Doctor _____

certify that (First name and Name) _____

Passport No _____

is a patient of mine who suffers from a growth disorder that requires, and for whom I have prescribed on a continuing basis, the use of FDA approved recombinant (bio-synthetic) growth hormone (rGH). rGH is made from fragile proteins that can be destroyed by temperatures outside the range of 2 to 8°C (36 to 46 degrees °F) for more than a few minutes at a time; and, therefore, is carried in a cooling pack or a miniature refrigerator. The rGH may be contained in a vial accompanied by syringes and needles, or in cartridge accompanied by pen and into which it is inserted, which is contained in a carrying case, and needles. rGH may also be degraded or destroyed by the x-rays emanating from airport person and luggage scanners. Because of those factors and the medical necessity for daily use of the rGH, it (vial or cartridge) must not be scanned with x-ray, hand checked, and remain with the patient during travel.

With Best Regards

Place : _____

Date : _____

Signature :



medactiv
transforming lives

NB: Treatment must never be stopped.

WWW.MEDACTIV.CA

TRANSPORTING YOUR GH

CARRY YOUR MEDICATIONS

Lifeina has developed a range of solutions to keep your growth hormones at the right temperature at all times. These solutions are divided in two major technologies, which are the LifeinaBag and LifeinaBox.

LIFEINABAG

The LifeinaBags use a new generation of chemical ice packs that do not sweat and have a longer thawing point than traditional ice packs. The LifeinaBags can keep medication between 2 and 8°C for up to 24 hours, depending on the model chosen. They also include separate compartments for transporting your accessories.

Beautifully tailored for your traveling needs, and made out of indestructible Cordura material, the LifeinaBags will give you years of service.



*Stay positive, stay **strong**. Focus on what you can do, not on what you can't...*





LIFEINABOX

LifeinaBox is the world's smallest fridge, tailor-made for the transport of growth hormones. With a built-in battery of 6 hours as well as extra battery packs, LifeinaBox allows you to travel anywhere, anytime, knowing that your growth hormone is always at exactly the right temperature. It is delivered with a universal adaptor allowing it to be plugged in in Asia, Europe, Switzerland, Australia and the UK.

HOW TO ACT AT THE AIRPORT

Always remain cool and composed. Generally, when going through controls, especially with a sick child, it is always easier to be friendly, to approach them with a smile, and to tell them "My child is sick, here are his prescription, his medication, his paperwork, can you please help me?" If you act like this, people will bend themselves backwards to help you. It is only if you try to hide everything at the bottom of your bag, trying to look innocent and hoping that they won't see it that they will inevitably be suspicious and you will then hear that ominous slapping of the rubber gloves for that full body cavity search.

1. Before placing your growth hormones on the scanner conveyor belt, notify the agent and request hand inspection of the growth hormone if you prefer it.
2. Provide any of the above information and documents requested.
3. Give to the agent the doctor's letter or medical certificate.
4. Politely answer any questions asked by the agent.
5. If the agent insists on having your growth hormone scanned (it happens sometimes), request to speak with a supervisor; and if not successful, ask to speak with the top transportation security administration manager at the airport.

Most importantly never lose your cool...

WHERE TO PUT YOUR MEDICATION ON THE PLANE

Generally, the luggage storage areas in planes are pressurized and maintained at a constant temperature of about 5°C. This is a standard for most airlines. It is not a problem for you to put your medicine in the luggage hold. However, if you make an unusual journey (for example through the Russian tundra with a former military aircraft Russian), you should know that the luggage area will probably be non-pressurized and will sometimes be at a sub-zero temperature that could freeze your medication.

NIFTY LITTLE TRICKS

- Check before you travel that your hotel room has a fridge to store your GH
- For environmental reasons, more and more



hotels are using coded cards to open the doors of their rooms and these cards are also often used as a switch to turn on and off the electricity in the room. This means that when you leave your hotel room, you take your card with you and turn off all the electricity in your room (including the little bar fridge where you keep your medications cool). To work around this problem, just use any old plastic card (a gym membership card, business card, etc.) to switch on the power in your room. Leave it permanently in the room so that the electricity stays on.

If you need to freeze the ice packs of your travel bag before leaving the hotel, the refrigerators in the hotel rooms are generally not of a very good quality and will not completely freeze your ice packs. So instead of using the bar fridge in your room, go down to the hotel bar and ask the helpful staff to freeze them for you. After all, they always need ice in bars for making gin tonics and therefore have high quality freezers.

USEFUL SITES

[European Health Insurance Card](#)

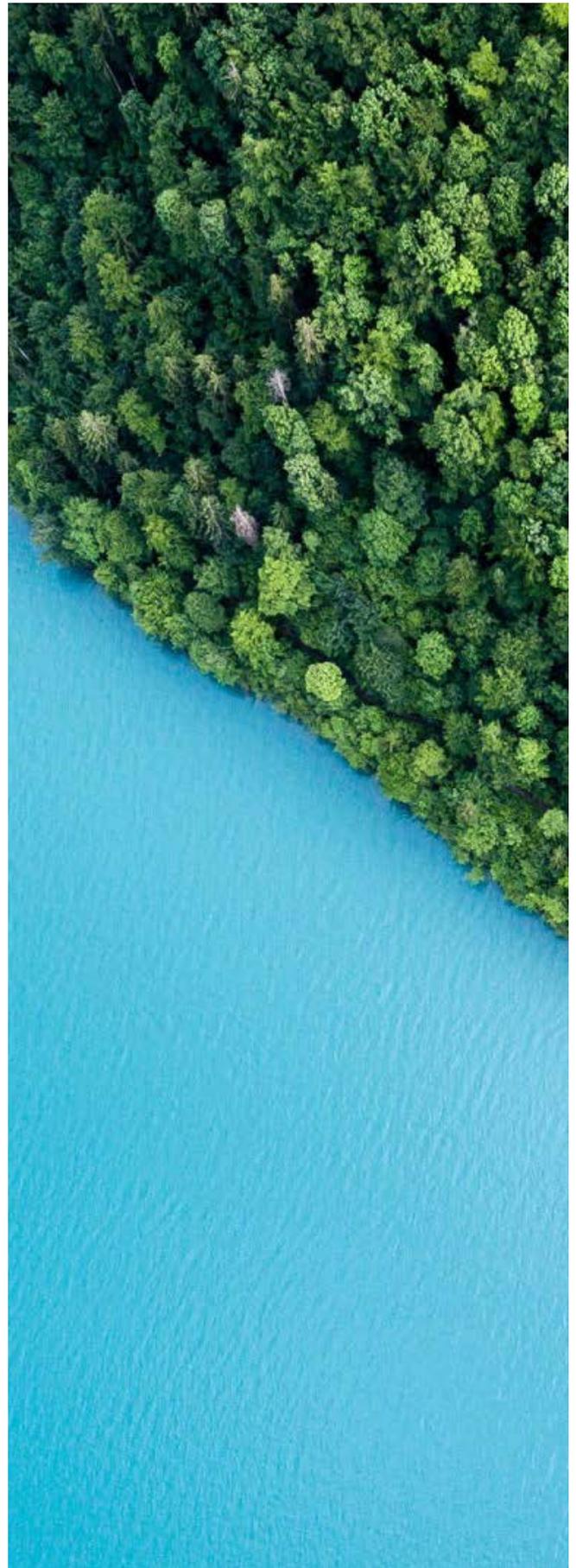
[Google translate](#)

[MedActiv](#) (transport solutions for medication)

[Lifeina](#) (the world's smallest fridge for transporting medication)



medactiv
transforming lives



**cold,
but with
a big heart**

lifeinabox



DISCOVER LIFEINA ON
WWW.LIFEINA.COM

ABOUT LIFEINA

Lifeina is an innovative startup that aims to be a global leader in the development of transport and storage solutions for sensitive medication. Our products are designed to give users the freedom to travel knowing that their medications are kept at exactly the right temperature.

The Lifeina solutions are specially designed to bring added value to the medications they are made for. Strategically located in Paris, we have the reputation of always anticipating the needs of our customers with an approach that is based on the total satisfaction of the end-user of the medication.

Our team of experts includes physicians, patients and engineers who are dedicated to finding better solutions for the transport and storage of sensitive medication.

EXCEEDING YOUR EXPECTATIONS FOR THE TRANSPORT AND STORAGE OF MEDICATIONS

For Uwe DIEGEL, creator of Lifeina, the company represents a personal investment. *"In 2003, my brother almost died following an incident where his medication was accidentally frozen in a hotel. So I started this company because of reasons that are more of a personal nature than just business. Lifeina is for me the ultimate expression of innovation at the service of healthcare. If the Lifeina products are so popular, it is because they are designed by patients for patients and because we speak directly with users of the medications to really understand their needs."*

THE LIFEINA MISSION

Lifeina challenges benchmarks in the thermo-sensitive medication sector. We manufacture and market innovative solutions for the storage and distribution of thermo-sensitive medications.

THE LIFEINA VISION

A future where users of medication are not hampered by intrinsic limitations dictated by their health condition. A future where users are allowed the freedom to take responsibility for their health by using the correct tools for health management.

For more information, please contact:

Lifeina SAS
6 rue de Castellane
75008 PARIS, France
Tel. +33 (0)1 42 66 15 59
hello@lifeina.com
www.lifeina.com

Live your life



**BON
VOYAGE !**



medactiv
transforming lives