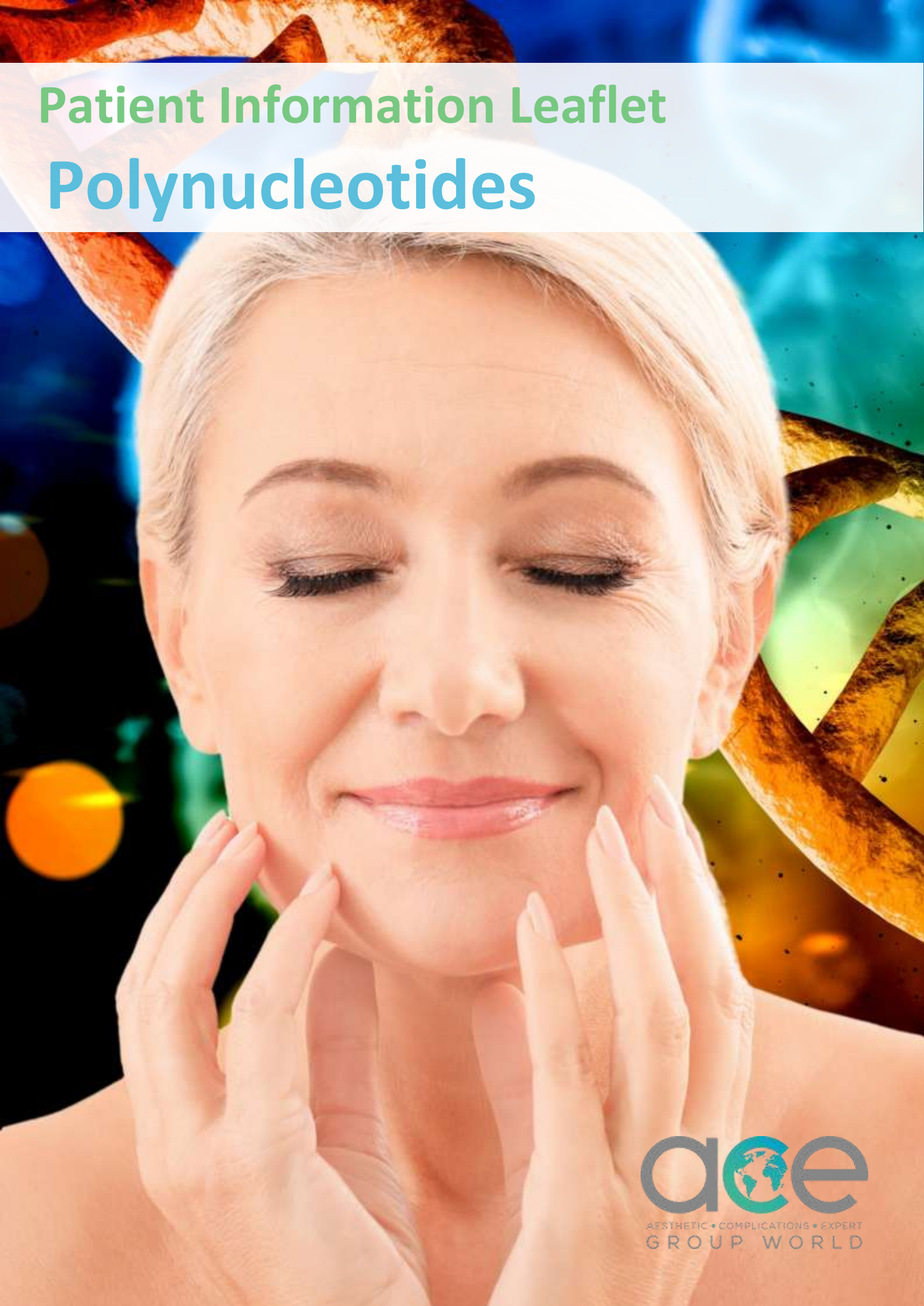
Patient Information Leaflet

Polynucleotides



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Patient Information Leaflet

Polynucleotides

If you are considering having a **polynucleotides** treatment, we recommend that you read the following information. This will help you to be fully prepared and know what questions to ask. We recommend that you check that the practitioner you choose is registered with a professional body. Prior to treatment, you should have a face-to-face consultation with your treating practitioner and be offered a cooling off period before returning for treatment, so that you have time to consider your decision carefully based on the information you have been provided with.

What are polynucleotides?

Polynucleotides (PNs) are long chains of nucleotides, which are the building blocks of DNA and RNA and usually obtained from salmon or trout DNA. These DNA fragments are purified and processed to be biocompatible and free from immune-triggering proteins, making them safe for human use. Salmon or trout DNA is highly compatible with human skin and has a similar structure to our own DNA.

Polynucleotides have powerful regenerative and anti-inflammatory properties, making them valuable in medical and aesthetic treatments. Polynucleotides are increasingly used in skin rejuvenation and regenerative medicine due to their ability to repair, hydrate, and stimulate collagen production.

Benefits of polynucleotides:

- ✓ **Skin Rejuvenation and Anti-Ageing:** Polynucleotides can stimulate fibroblast activity to boost collagen and elastin production, improve skin texture, elasticity and firmness and help to reduce fine lines and wrinkles.
- ✓ **Skin Barrier Repair and Hydration:** The treatment can deeply hydrate the skin by attracting and retaining moisture as well as strengthening the skin barrier, reducing sensitivity and inflammation.
- ✓ **Wound Healing and Skin Regeneration:** They help promote tissue repair for acne scars, surgical scars, or stretch marks and aid recovery following other aesthetic procedures.
- ✓ **Under-Eye Rejuvenation:** Polynucleotides are particularly useful for improving the delicate skin around the eyes, which can be a problematic area to treat with other procedures and products. They can help improve dark circles, fine lines, and thinning skin and reduce puffiness and improve skin quality.
- ✓ **Stimulates Hair Growth:** Finally, polynucleotides are used in scalp treatments to encourage hair growth and strengthen follicles and can be beneficial for conditions like androgenetic alopecia.

Ensure your practitioner is a registered healthcare practitioner.

Polynucleotides can be injected by needle or cannula or applied topically to the skin in combination with laser or microneedling to enable absorption.

Polynucleotide treatments come in different formulations, with variations in concentration, molecular weight, and intended effects. Low-Molecular Weight polynucleotides (LMW-PN) consist of smaller molecules allowing better penetration and have strong anti-inflammatory properties making them ideal for irritated, sensitive and rosacea-prone skin as well as deep hydration and radiance. High-Molecular Weight polynucleotides (HMW-PN) are larger molecules and remain in the skin for longer. They can stimulate fibroblasts (skin cells) to produce more collagen and elastin to improve fine lines and scarring. Combination products are also available which contain both low and high molecular weight polynucleotides to have a dual effect. Some products also contain hyaluronic acid, which is the chief component of most dermal fillers, to produce volume as well as rejuvenation.

Ask your practitioner what product they are using and why?

What areas can be treated?

Polynucleotides (PNs) are highly versatile and can be used to improve skin quality, hydration, and regeneration in multiple areas. They are most commonly used for face, neck, décolleté, scalp, and hands, but can also treat scars and stretch marks.

- ✓ Face (Fine lines, dull skin, loss of elasticity)
- ✓ Under-eyes (Dark circles, fine lines, crepey skin)
- ✓ Neck & Décolleté (Wrinkles, sagging skin, dryness)
- ✓ Scalp (Thinning hair, hair loss)
- ✓ Hands (Crepey skin, sun damage, ageing)
- ✓ Scars and stretch marks (Healing, regeneration)

How does it work?

When polynucleotides are injected into the skin, they initiate a process called bio-stimulation, which encourages your body to repair and regenerate tissues. The main ways polynucleotides work include:

- ✓ **Cellular Regeneration:** Polynucleotides stimulate fibroblasts, the cells responsible for producing collagen and elastin. This leads to increased collagen production, improving skin firmness, elasticity, and reducing fine lines and wrinkles.
- ✓ **Hydration and Moisture Retention:** Polynucleotides attract and bind water molecules, providing deep hydration to the skin. This enhances skin texture and gives it a plumper, more youthful appearance.
- ✓ **Tissue Repair and Healing:** Polynucleotides accelerate the skin's natural healing process, making them ideal for improving acne scars, stretch marks, and post-surgical scars.
- ✓ **Anti-Inflammatory and Antioxidant Effects:** Polynucleotides reduce inflammation and neutralise harmful free radicals. This makes them ideal for calming sensitive, red, or reactive skin, and for aiding post-treatment healing.
- ✓ **DNA Repair and Protection:** Polynucleotides contribute to cellular DNA repair, protecting against environmental damage and ageing.
- ✓ **Cell Proliferation and Angiogenesis:** They activate cellular repair pathways and promote new blood vessel formation, improving oxygen and nutrient supply to tissues.

Polynucleotides have a good scientific basis and growing clinical evidence supporting their use in skin rejuvenation, wound healing, hair restoration, orthopaedics, and ophthalmology. Their ability to stimulate cell repair, reduce inflammation, and enhance hydration makes them a promising tool in regenerative medicine.

Is it painful?

Polynucleotide injections can be slightly uncomfortable or painful, depending on factors like:

- ✓ **Injection technique** (Depth, speed, and needle/cannula size)
- ✓ **Treatment area** (Thinner skin, like under the eyes, is more sensitive)
- ✓ **Individual pain tolerance** (How they compare to other treatments)

Most patients report a mild to moderate stinging or burning sensation, especially in sensitive areas like the undereye, neck, and around the mouth. This is due to the viscosity of the product and its interaction with tissues.

There are several strategies to minimise discomfort during the procedure:

- ✓ **Topical Anaesthetic (Numbing Cream):** Applying an anaesthetic-based numbing cream (such as EMLA or LMX4) 20-30 minutes before the procedure significantly reduces pain.
- ✓ **Mixing with Lidocaine:** Some products already contain lidocaine for a more comfortable experience. If not, some practitioners mix the solution with a small amount of lidocaine before injection (if the product allows for it).
- ✓ **Ice or Cooling Devices:** Applying ice packs before and after injections can numb the area and reduce swelling and some clinics use cold air devices to minimise discomfort.
- ✓ **Cannula Instead of Needles:** Using a blunt-tip cannula instead of needles can reduce pain, bruising, and swelling. Cannulas allow for fewer entry points, meaning less trauma to the skin.
- ✓ **Slow Injection Technique:** A slower, more controlled injection reduces the burning sensation.
- ✓ **Vibration or Distraction Techniques:** Some clinics use vibrating devices near the injection site to confuse pain receptors.
- ✓ **Breathing Techniques:** Engaging the patient in conversation or breathing techniques can also help reduce anxiety and discomfort.

Is it safe?

Polynucleotides are generally considered safe when used correctly, but like all treatments, they come with certain risks and potential complications. The safety profile largely depends on the quality of the product, the experience of the practitioner, and the clinical setting.

Side-effects may be more likely due to the following factors:

- ✓ **Patient factors:** Unrealistic expectations, certain medical conditions, lifestyle, skin condition.
- ✓ **Practitioner factors:** Training, expertise, incorrect product selection, number of procedures performed.
- ✓ **Premises factors:** Suitability of the premises, infection control, space.

Ensure that you are provided with an out of hours number in case of an emergency.

While polynucleotides are generally considered safe, like any procedures, there are possible risks.

- ✓ **Swelling/Oedema:** Swelling at the injection site is a frequent response to polynucleotide injections. It occurs due to the product's viscosity and the body's natural reaction to the injection. It may appear immediately or within the first few hours. It will usually settle within about 48 hours, and you may be advised to apply a cool pack.
- ✓ **Bruising:** Bruising can occur if a blood vessel is punctured during the injection. It is common in areas with thinner skin or more vascularity, such as the under-eyes or lips. It typically lasts 3-7 days, depending on the individual's healing process. Ice packs can help reduce bruising, and applying arnica gel may promote healing.
- ✓ **Redness and Irritation:** Mild redness, irritation, or itching at the injection site may occur immediately after treatment as part of the skin's normal response. It is generally self-limiting, but if discomfort persists, contact your practitioner for advice on soothing creams.
- ✓ **Pain or Tenderness:** A mild stinging or soreness may occur at the injection site due to the needle penetration and the product itself. It may last for hours to a few days, over-the-counter pain relievers like paracetamol may be used. Avoid anti-inflammatory drugs unless instructed by your practitioner.
- ✓ **Itching or Rash:** A mild allergic reaction to polynucleotides or the solution's components may cause itching or a rash. This is typically localised to the injection site and can last for a few hours but should resolve after treatment with antihistamines or a soothing cream.
- ✓ **Infection:** Infection is a rare but possible complication. It can occur if bacteria enter the skin at the injection site during the procedure. Infection may cause redness, swelling, warmth, and discharge from the site. Symptoms of infection include severe redness, warmth, pain, or pus at the injection site, along with systemic symptoms like

fever. If you suspect an infection, contact your practitioner immediately. Early intervention with antibiotics is crucial to prevent the infection from worsening.

- ✓ **Allergic Reaction:** An allergic reaction to the polynucleotide solution or other components (e.g. preservatives, salmon or trout DNA) is possible, though rare. Allergies can cause swelling, itching, rash, and in extreme cases, anaphylaxis. Symptoms may include swelling beyond the injection site (especially around the eyes, lips, or throat), difficulty breathing, tightness in the chest, or dizziness. If you experience any of these severe symptoms, seek emergency medical attention immediately.
- ✓ **Nodules or Lumps:** Nodules or small lumps under the skin can form when the polynucleotide product is unevenly distributed or over-injected. This can lead to localised firm areas at the injection site. In many cases, the lumps resolve on their own as the body absorbs the product. If they persist, your practitioner may suggest gentle massage or other treatment options. In rare cases, further treatment may be needed to break down the nodules.
- ✓ **Scarring or Keloids:** In rare cases, an individual may develop scarring or keloids (excessive scar tissue) due to the injection. This risk is higher in people who are predisposed to keloid formation. If you have a history of keloids or thick scars, inform your practitioner before treatment. If scarring or keloids develop, treatments like silicone sheets, steroid injections, or laser therapy may be required.
- ✓ **Hyperpigmentation or Hypopigmentation:** Changes in skin pigmentation can occur after the procedure, resulting in dark spots (hyperpigmentation) or lighter areas (hypopigmentation) than the surrounding skin. Hyperpigmentation generally fades over time. However, if pigmentation changes are persistent or severe, consult with your practitioner for treatment options such as light therapies.
- ✓ **Vascular Complications:** Vascular complications like vascular occlusion or bleeding can occur if an injection inadvertently damages a blood vessel. This can cause severe pain, discoloration (e.g., a bluish tint), and tissue damage. Immediate medical attention is necessary if you suspect vascular occlusion. Early intervention is critical to prevent tissue damage.

If you develop any unexpected side-effects after treatment, it is important to contact your practitioner for a review as soon as possible, as they may be able to offer some corrective treatment. Although your practitioner may contact you by telephone or video call initially or you may send your own photographs, this is no substitute for a face-to-face review to provide an accurate diagnosis.

What does the procedure involve?

Prior to your treatment you should be given a full consultation, a skin assessment, complete a medical questionnaire and be offered a cooling off period to enable you to make an informed decision with full disclosure of the possible risks and side effects specific to you. Alternative treatment options may also be discussed. You should be given an indication of the cost of the treatment. Before you receive any treatment, you will be required to sign a consent form, this may be on paper or electronic and be given the opportunity to ask any further questions. Photographs may be taken and kept as part of your medical record. These should not be used for any other purpose without your explicit permission.

Ask your practitioner what technique they will use to administer the polynucleotides and why?

Your skin will be thoroughly cleaned to remove makeup, oils, and dirt. This step ensures that the area is sterile before the treatment. Although polynucleotide injections are not highly painful, a local anaesthetic (numbing cream or injection) may be applied to the treatment area to minimise discomfort. A local anaesthetic cream should remain on the skin for 20-30 minutes to take effect. This is especially important for areas of sensitive skin, such as the under-eyes. The practitioner may mark the injection sites to ensure precision during the procedure.

Most commonly, the polynucleotide solution is injected into the dermis (middle layer of the skin) using a fine needle. The treatment may involve a series of small micro-injections to cover the treatment area evenly or it may be injected using a retrograde linear technique. Sometimes, polynucleotides are administered using a blunt-ended cannula to ensure a lower risk of bleeding and bruising. However, cannulas are usually placed below the level of the dermis and so the polynucleotides must travel to the area where they need to work at. Finally, polynucleotides can be administered topically using microneedling or laser to create channels for the molecules to enter the skin. The success of the procedure is dependent on how much product is delivered to the right place.

Following treatment, the practitioner may massage the area and then clean the skin. Some practitioners might apply a cream post-treatment. Once you and the practitioner are satisfied with the results of the treatment and you have been given sufficient recovery time, you should be given the opportunity to book a follow up appointment and receive aftercare information either in paper form or electronically.

The procedure typically takes 15-30 minutes, depending on the size and number of areas being treated. You may start seeing visible improvements in skin texture and hydration within 1-2 weeks. The skin may appear firmer, more radiant, and smoother as collagen stimulation continues. Full results generally take 4-6 weeks to become noticeable as collagen production increases. Results typically last for several months, depending on the individual and the area treated. Depending on your aesthetic goals, additional sessions may be recommended. Most practitioners recommend a course of 2-3 sessions, spaced about 2-4 weeks apart to achieve optimum results.

Am I suitable for treatment?

Polynucleotide treatments are primarily used for skin rejuvenation, hydration, and tissue regeneration. They are suitable for a wide range of individuals, especially those looking to improve the appearance of ageing skin or enhance overall skin health. However, individual suitability depends on various factors, including skin condition, health status, and aesthetic goals.

You may not be suitable for treatment if any of the following apply:

- ✓ There is insufficient clinical evidence to determine the safety of polynucleotides for pregnant or breastfeeding women, so it is best to avoid the treatment during these periods.
- ✓ If a person has an allergy to any of the components (e.g. salmon-derived DNA), they could experience an allergic reaction, which could range from mild to severe.
- ✓ Any active skin infection, including acne, herpes simplex (cold sores), or bacterial/fungal infections at the treatment site.
- ✓ Active inflammatory skin conditions may interfere with the treatment's effectiveness or worsen the condition.
- ✓ Autoimmune conditions such as lupus, rheumatoid arthritis, or other autoimmune disorders that affect the immune system.
- ✓ People with bleeding disorders, or taking blood thinning medication, are at a higher risk of excessive bruising or bleeding following injection.
- ✓ People with a weakened immune system, such as HIV/AIDS or certain cancer treatments, may have a compromised ability to fight infections or heal properly after the procedure.
- ✓ Active cancer or a recent history of cancer, as the impact of stimulating tissue regeneration on tumour growth is not well understood.
- ✓ Chronic conditions may interfere with healing and increase the risk of complications.
- ✓ Individuals who have a history of keloid scarring (excessive scarring that forms thicker, raised scars).
- ✓ If your practitioner does not feel they can meet your treatment expectations.

It is important to be honest about your medical history, medication and previous aesthetic treatments so that you can have a safe and effective treatment.

Pre-treatment advice

- ✓ Avoid taking anti-inflammatories (such as aspirin, ibuprofen, naproxen) for 3 days prior to treatment (unless this has been prescribed by your doctor) as this increases the risk of bruising.
- ✓ Alcohol, fish oils, St. John's Wort, Gingko Biloba, garlic and Vitamin E should also be avoided for 3 days prior to treatment to lessen the risk of bruising.
- ✓ If you are prone to bruising, taking arnica orally for a few days prior to treatment may lessen the risk.
- ✓ If you have a history of cold sores (herpes simplex virus) and are having treatment near the lips, consider taking an antiviral medication as a preventive measure.
- ✓ Avoid intense sun exposure or tanning beds to prevent sunburn, which can increase skin sensitivity.
- ✓ Do not use active skincare ingredients, such as retinol, AHAs (glycolic acid), BHAs (salicylic acid), or strong exfoliants prior to treatment.

- ✓ Avoid waxing, threading, or laser treatments on the treatment area.
- ✓ If you are unwell on the day of your appointment, contact the practitioner to reschedule.
- ✓ Ensure your practitioner is informed if there are any changes in your medical history or medication taken before receiving any treatment.
- ✓ Make sure you have allowed some days after treatment for downtime for any side-effects to settle.

Do not plan to have treatment within 1 week of an important social event or holiday as this may not allow enough time for side-effects, such as bruising to settle, or to have a review appointment.

Post-treatment advice

Many practitioners advise the following:

- ✓ Do not apply make-up for 12 hours after treatment to reduce the risk of infection.
- ✓ Try to avoid touching or massaging the area unless specifically instructed to do so.
- ✓ Cleanse your face gently with a mild cleanser and avoid scrubbing or exfoliating the area.
- ✓ Refrain from intense physical exercise, saunas, steam rooms and hot baths to prevent excessive sweating.
- ✓ Refrain from facial treatments like massages, facials or chemical peels for at least two weeks.
- ✓ Do not use harsh skincare products, such as retinol, exfoliants or acids, until your practitioner advises it is safe.
- ✓ Continue to stay hydrated and maintain a healthy diet to support skin repair and collagen production.
- ✓ If mild bruising occurs, you can apply arnica cream or take an arnica supplement to help it fade faster.
- ✓ Contact your practitioner if you experience any unwanted side-effects.

Attention to aftercare is paramount to achieve your desired results!

Choosing your practitioner

Ensure you know the following information:

- ✓ Practitioner's full name
- ✓ Practitioner's profession
- ✓ Practitioner's contact details (address, telephone number, and email)
- ✓ An emergency contact number in case a complication occurs.

Practitioners should be registered with a professional body (General Medical Council, General Dental Council, Nursing and Midwifery Council, General Pharmaceutical Council or Health and Care Professions Council) and you can check their current registration status online. Practitioners are accountable to these bodies and are legally required to have indemnity insurance in place for all the treatments they perform.

If you are not happy with your treatment outcome, you should attempt to resolve this with your treating practitioner in the first instance. If you need to see a different practitioner, you are entitled to receive a copy of your treatment record outlining the product used, areas injected and dosage, as well as any photographs that were taken, to have your concerns addressed safely. However, remedial treatment may not always be possible and sometimes it may be necessary to allow time for the treatment to wear off.

ACE Group World was formed to help improve patient safety in medical aesthetics by producing evidence-based, peer-reviewed guidelines for the management of a wide variety of complications in non-surgical aesthetic practice. We also aim to provide help and advice for practitioners who encounter a problem.

ACE Group World hosts a forum for practitioners to share advice on the management of complications. It also provides an Emergency Helpline, email support and on-line educational modules for its members. The members also benefit from workshops, conferences, and a faculty of national and international experts.

ACE Group World works with aesthetic organisations, professional bodies, media, pharmaceutical companies, patient groups, insurers and regulatory bodies to provide professional advice and benefit for its members. Our mission is to improve regulation in the medical aesthetics sector and to provide ACE Group World Patient Information Leaflets to inform the public about what to expect and what questions to ask. We constantly strive to raise standards and improve patient safety.

Check your practitioner is a member of ACE Group World:

uk.acegroup.online