ENDOVENOUS LASER ABLATION (EVLA)

ANGEL™ RADIAL EMISSION FIBER

NEW STANDARD IN LASER SURGERY
Varicose Veins: Beyond Cosmetics
A Clinical Issue

For many people, varicose veins are simply a cosmetic issue. While for others, they can be a source of pain and discomfort.

“Varicose Veins” refer to veins that have become enlarged and tortuous due to valvular incompetence. Functioning veins have ‘leaflet’ valves that prevent the backflow of blood. However, when these valves no longer meet properly, blood leaks backwards causing the vein to become abnormally swollen and dilated – or “varicose”.

Varicose veins occur most commonly in the superficial veins of the legs, due to high pressure when standing. Besides causing an unsightly brownish-blue skin discoloration near the affected veins, varicose veins can also be painful, especially when standing.

If left untreated, varicose veins can lead to more serious conditions such as superficial thrombophlebitis, venous eczema, ulceration and deep vein clotting.

Images courtesy of Dr. David Greenstein, MBChB BSc MD FRCS
The Problem and its Causes
+ Leaky valves allow backflow of blood
+ Pool formation in vein leads to swelling
+ These “pools” can lead to clots
+ Clots can break off and spread through body and cause a heart attack or stroke

Types of Varicose Veins
Trunk varicose veins: thick, bumpy and up to 3-4 millimeters in size, they are visible near the surface of the skin.

Reticular varicose veins: red and sometimes grouped close together in a network.

Telangiectasia varicose veins: also known as ‘thread’ or ‘spider’ veins, these are harmless and appear as small clusters of blue or red veins on the face or legs. They are non-bulging.

Varicose Veins: Key Facts
Varicose veins are very common in the U.S, with up to 15% of men and 25% of women having the condition. For some people, varicose veins and spider veins are a cosmetic concern. For others, varicose veins can cause aching pain and severe discomfort.
+ Varicose veins can lead to more serious health problems
+ An estimated 72% of women and 42% of men in the U.S will experience varicose veins in their 60s
+ Prevalence is highly correlated to age and gender

Common risk factors:
+ Multiple pregnancies
+ Family history
+ Obesity
+ Standing profession
+ Lack of exercise
+ Strenuous muscular work

Angel State-of-the-Art Endovenous Therapy

Angel - Radial Emission Fiber provides a powerful stand-alone EVLA solution, surpassing current alternatives.

What is Angel?
An innovative endovenous laser treatment for varicose veins. Named after the ‘red halo’ from the radial emission fiber, Angel offers a minimally invasive procedure that seals off the vein, while inside the leg.

Available Angel Radial Emission Fibers 600 microns and 400 microns diameter
How Does Endovenous Laser Ablation (EVLA) Work?

During the procedure, laser energy is delivered through a small laser fiber to a targeted vein, in a series of brief pulses. The energy is absorbed by the lining of the vessels and the heat generated causes ablation of the target avoiding perforations and damage to surrounding tissues.
1470nm has a superficial penetration depth, delivering excellent ablation of the vein wall, with less bruising than alternative methods e.g. RF. This wavelength is also ideal for EVLA using tumescent anaesthesia or even other methods as preferred by the surgeons.

Immaculate Results: Before and After

Images courtesy of Dr. David Greenstein, MBChB BSc MD FRCS
Market First Endovenous Laser Ablation

The Angel outpatient procedure provides long-lasting results with virtually no scarring.

The Angel Advantage
+ Vein ablation is a minimally invasive laser therapy
+ Outpatient procedure
+ No risk from anesthesia
+ No scars or stitches
+ Minimal post-procedure pain
+ Minimum downtime
+ High success rate and low recurrence rate
+ Safe
+ Versatile
## Angel Radial Emission Fiber Technical Specification

<table>
<thead>
<tr>
<th><strong>Output</strong></th>
<th><strong>Delivery System</strong></th>
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</thead>
<tbody>
<tr>
<td>Laser Type</td>
<td>GaAlAs diode laser</td>
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<tr>
<td>Wavelength</td>
<td>1470nm±10nm</td>
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<tr>
<td>Housing</td>
<td>Fiber-coupled diode laser</td>
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<tr>
<td>Output Power</td>
<td>1-15W</td>
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<tr>
<td>Operation Mode</td>
<td>cw, single pulse, repetition pulse</td>
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<tr>
<td>Pulse</td>
<td>Pulse width: 10μs-1s, Pulse repetition rate: 0.5Hz-10KHz</td>
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<tr>
<td>Transmission System</td>
<td>Contact: fibers of 400μm, 600μm &amp; 1000μm with SMA905; Non-contact: fibers &amp; tips</td>
</tr>
<tr>
<td>Aiming Beam</td>
<td>Diode laser of 650nm, power 5mW, adjustable brightness</td>
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<td>Operation Interface</td>
<td>Color LCD touch screen</td>
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<td>Power Supply</td>
<td>230Vac, 5A, 50Hz</td>
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<td>Laser Class</td>
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<tr>
<td>Safety Classification</td>
<td>Class Type B</td>
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<td>Cooling</td>
<td>Air</td>
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</tbody>
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About Alma Lasers

Alma Lasers develops the widest range of high performance laser, light-based, dielectric heating and ultrasound platforms for surgical, dermatologic and aesthetic applications. For over a quarter of a century, surgeons and medical practitioners worldwide have been relying on the ingenuity and thought leadership of the scientists at Alma Lasers.

Our global success is based on our hands-on experience in lasers and light-based medical technology, focus on R&D and product innovation, rapid response to evolving industry demand, together with our close work with the surgeons and medical practitioners who use our products.

Please contact us for more information:
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