

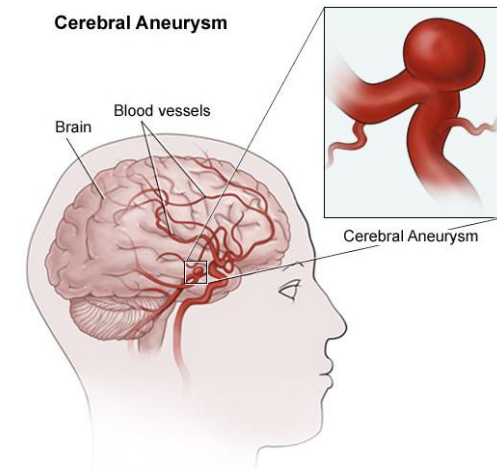


Peter Lazic GmbH

Aneurysm Clip Systems

Aneurysms

- ② **What is an intracranial Aneurysm?**
 - ② intracranial aneurysms are expansions of blood vessels in different forms and sizes
- ② **The sizes vary from 1 mm up to 100 mm and are categorized in three groups:**
 - ② small aneurysm 1 – 10 mm
 - ② big aneurysm 10 – 25 mm
 - ② giant aneurysm 40 – 100 mm
- ② **Accrue ment of an Aneurysm**
 - ② congenital debility of the vessel septum
 - ② inflammatory change of vessel or injury of the vessel septum



Aneurysms

● Aneurysm forms

■ Saccular Aneurysm

Also known as berry aneurysms, appear as a round outpouching and are the most common form of cerebral aneurysm.



Saccular Aneurysm

■ Fusiform Aneurysm

Represent a widening of a segment of an artery around the entire blood vessel, rather than just arising from a side of an artery's wall.

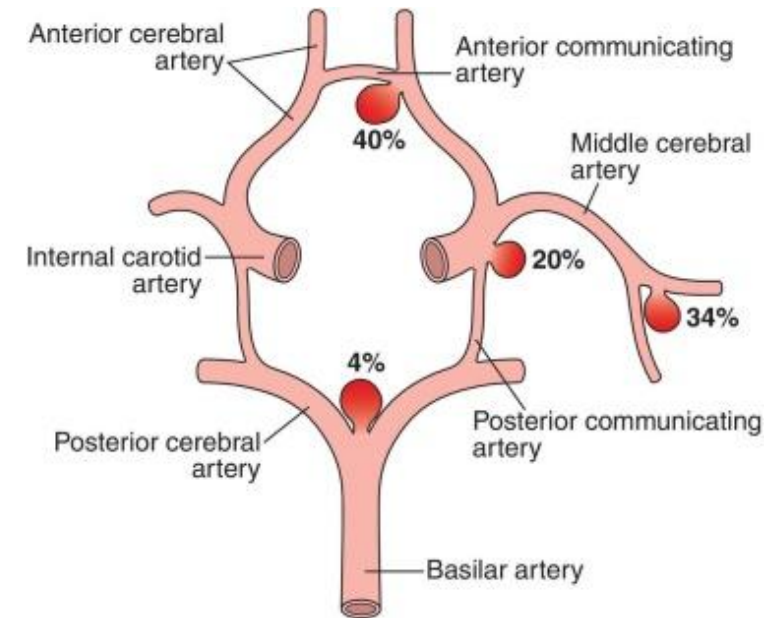
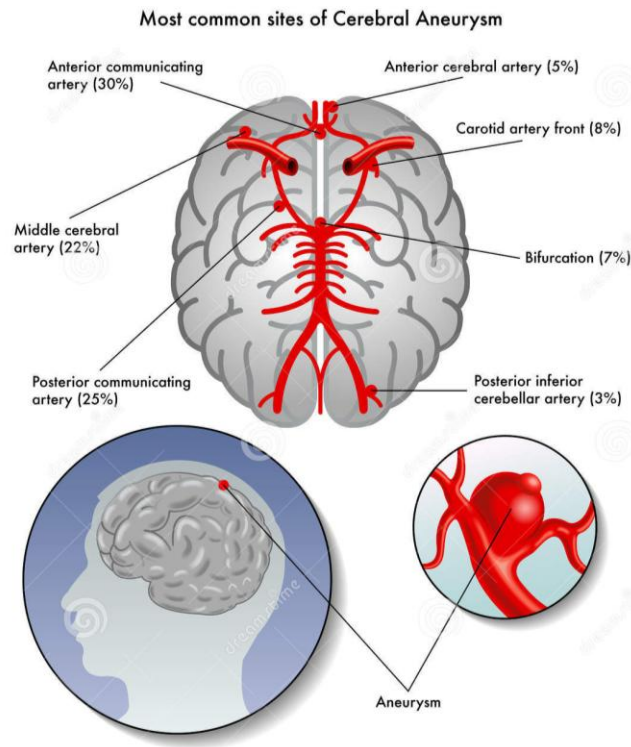


Fusiform Aneurysm

Aneurysms Clip Market

Localization and frequency

- Most aneurysms are found in the front part of Circulus Arteriosus Willis



4. Cerebral Aneurysm Clips Market – Market Landscape

4.1 Overview

The global Cerebral Aneurysm Clips market is estimated to grow at a CAGR of 6.27% from 2022-2028. Key factors that are driving growth of the market are increasing prevalence of brain aneurysm and associated risk factors and rise in research and development activities for treating cerebral aneurysm are expected to drive the market growth. However, high cost of surgical procedure is hampering the market's growth.

Aneurysms Clip Market

6.1 Global Cerebral Aneurysm Clips Market Revenue Forecasts and Analysis

6.1.1 Overview

The global Cerebral Aneurysm Clips market is expected to reach **US\$ 81,960.74** Thousand in 2028 from US\$ 53,810.74 Thousand in 2021. The market is estimated to grow with a **CAGR of 6.27%** from 2022-2028. The key factors that are driving the market are rising number of neurosurgeries procedures followed by increasing research and development. However, the high cost of procedure is expected to restrict the market growth during the forecast period.

Figure 16. Global Cerebral Aneurysm Clips Market – Revenue Forecasts and Analysis – 2020- 2028

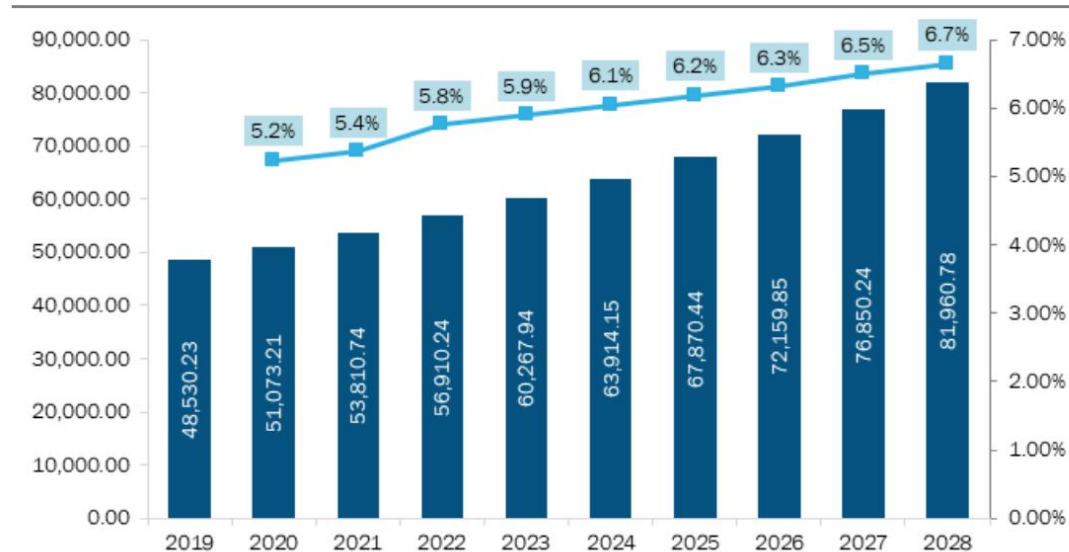
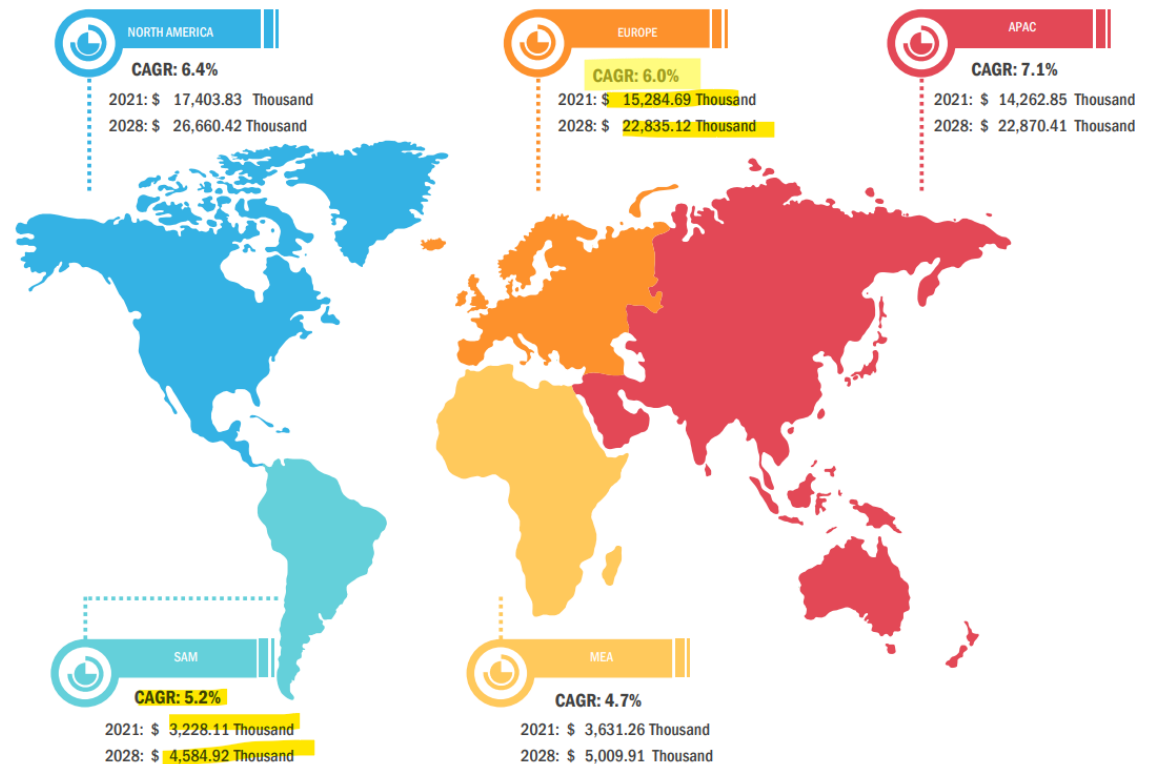


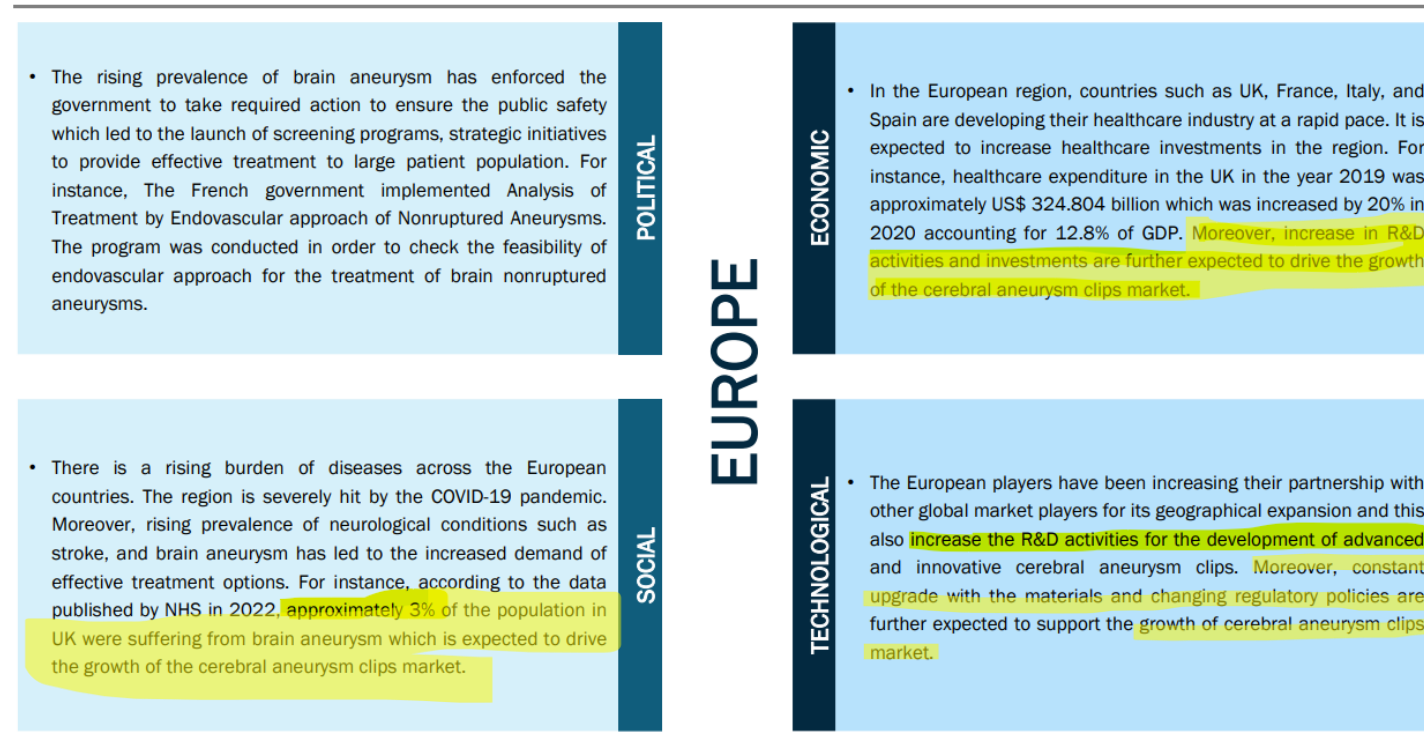
Figure 17. Global Cerebral Aneurysm Clips Market – By Geography Forecasts and Analysis – 2022- 2028



Aneurysms Clip Market

4.2.2 Europe PEST Analysis

Figure 10. Europe: PEST Analysis



Aneurysms Clip Market

5.1.2 Rise in Research and Development Activities for Treating Cerebral Aneurysms

Several research organizations and companies are implementing constructive strategies to boost the research and development programs for treating cerebral aneurysms. In August 2019, Fujitsu Australia, Macquarie Medical Imaging, Macquarie University, and GE Healthcare announced a new research collaboration to develop advanced techniques to improve cerebral aneurysm diagnosis by utilizing and adopting **artificial intelligence (AI)** to identify and analyze cerebral bulges. Further, in July 2022, researchers in Halifax created the ultrahigh-resolution ultrasound endoscope for surgeries. This endoscope functions by inserting a probe to visualize all the arteries. In addition, the product will allow surgeons to clip aneurysms and find all those arterial branches with greater confidence. In November 2016, Neos Surgery, headquartered in Barcelona, Spain, **developed a plastic clip in collaboration with** Advanced Engineering & Technologies GmbH and Institut für Verbundwerkstoffe GmbH, both located in Kaiserslautern, Germany. The new product significantly enhances earlier metal clips to treat cerebral aneurysms. Plastic clips **allow post-surgical checkups via magnetic resonance imaging (MRI) and computed tomography (CT) scans**, which is impossible when metal clips are in use. The technology was developed with the aid of the European Union's Eureka Eurostars program, which funded US\$ 1.23 million for the R&D.

Moreover, **physicians use intraoperative angiography** (advanced imaging) to compare the **blood vessels before and after surgery while clipping**. These pictures help ensure a positive outcome. Neurosurgeons can also make **a smaller opening in the skull, which means less scarring**. Several companies in this space also focus on collaborative efforts to introduce new technologies and novel products for treating cerebral aneurysms.

Aneurysm Clips - Overview

Yasargil Aneurysm Clips by Peter Lazic GmbH



Yasargil - Standard
Permanent - Titan



Yasargil – Standard
Temporary - Titan



Yasargil – Standard / Mini
Permanent – Phynox

85% Titanium Clips



Yasargil – Mini
Permanent - Titan



Yasargil – Mini
Temporary - Titan



Yasargil – Standard / Mini
Temporary - Phynox

15% Phynox Clips

Aneurysm Clips - Overview

Yasargil Aneurysm Clips by Peter Lazic GmbH

- Are an OEM Aneurysm Clip System by Peter Lazic GmbH
- Form and features are related to the Aesculap Yasargil Clip System

PERMANENT				
Item No.		Blade length mm	Maximal opening mm	Closing force N g
FT740T		7.0	6.2	1.47 150
FT750T		9.0	7.0	1.77 180

	65.740 T 65.740 6.2 mm 1,47 N 150 g		65.750 T 65.750 7.0 mm 1,77 N 180 g
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PERMANENT				
Item No.		Blade length mm	Maximal opening mm	Closing force N g
FT752T		8.3	6.8	1.77 180
FT762T		10.2	7.5	1.77 180

	65.752 T 65.752 8.3 mm 1,77 N 180 g		65.762 T 65.762 7.5 mm 1,77 N 180 g
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Aneurysm Clips - Overview

L-Aneurysm-Clips ® only by Peter Lazic GmbH!



L-Clip - Standard
Permanent - Titan



L-Clip – Standard
Temporary - Titan



L-Clip – Fenestrated
Permanent – Titan



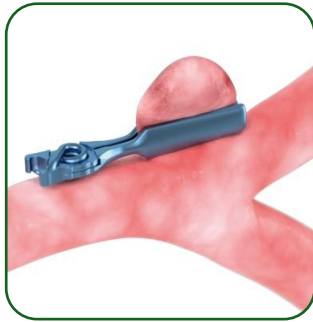
L-Clip – Mini
Permanent - Titan



L-Clip – Mini
Temporary - Titan

L-Aneurysm-Clip ®

Special L-Clips exclusively by Peter Lazic GmbH



Paddle Clip

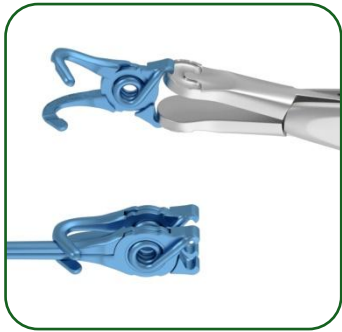
Larger width of jaw instead 1,2 mm → 2,8 mm.
This enable to calmped several clips next to each other "Stacking method" or instead of two using one"



Tunnel Clip

Due to the special "tunnel" shape these clips are used for closing of fusiform aneurysms.

Special L-Clips by Peter Lazic GmbH



Booster Clip

For special applications with very large aneurysms, extreme vascular changes or as an alternative to the "Stacking method" the booster clip is used to enhance the closing force of a previously applied L-Clip.



Bypass Clip

These temporary clips have a special design and serve the surgeon for short-term clamping and for creating a clear view on the vessel to be operated.

Advantages/Benefits

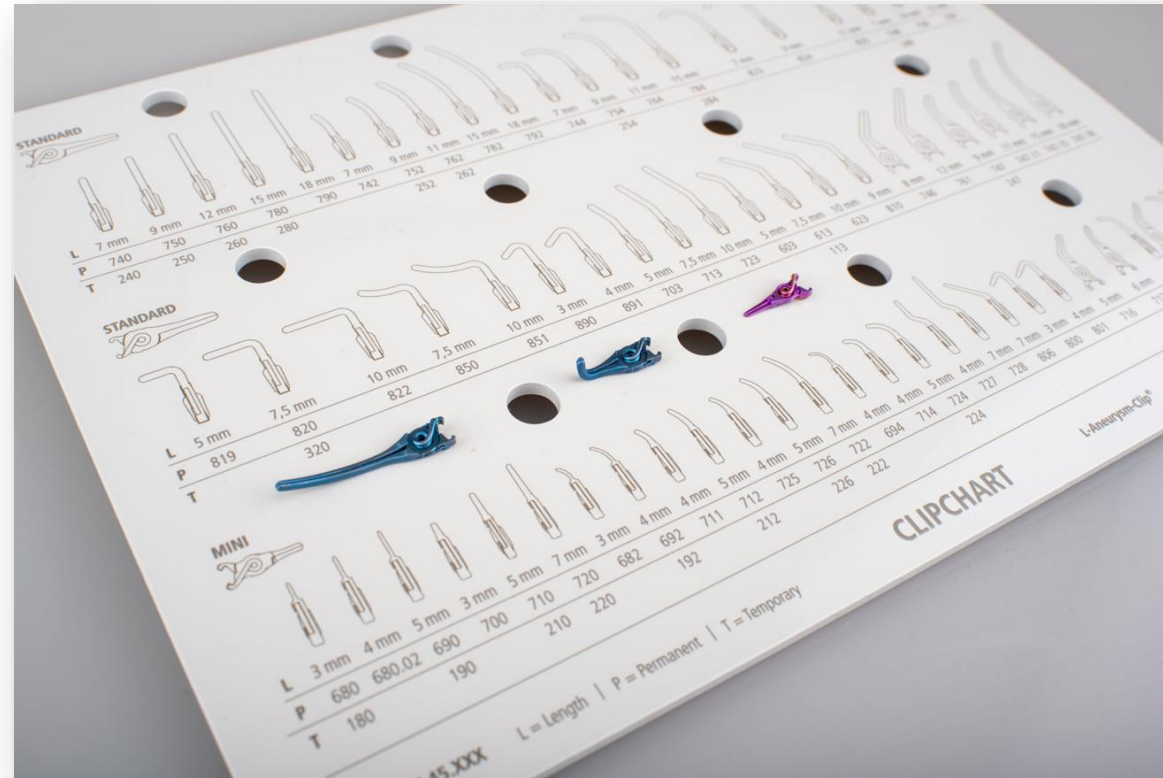
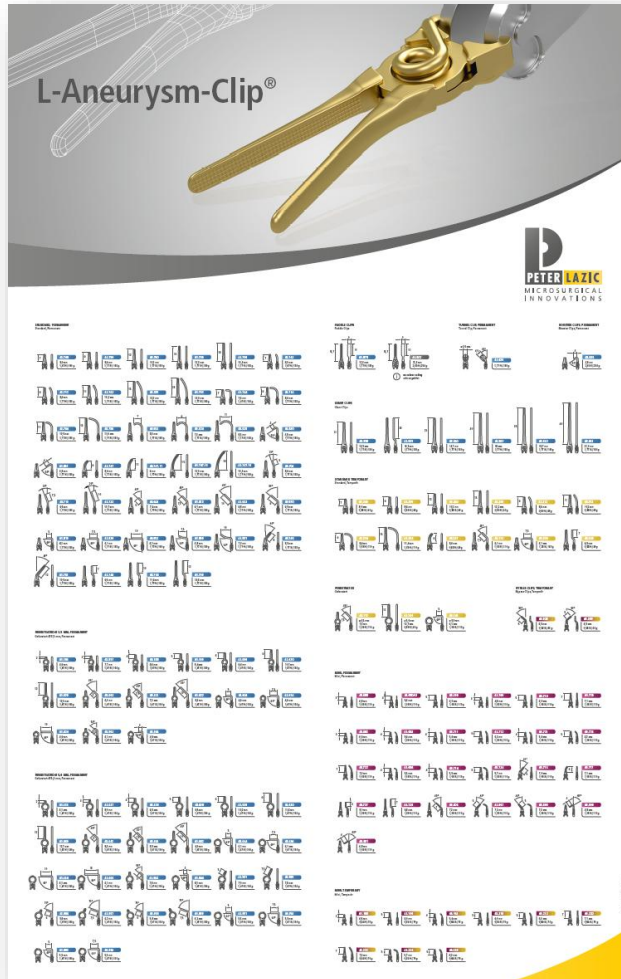
② Invert opening mechanism

- ② The invert opening mechanism enables a total overview of the operating field.
- ② This system prevents that the clip is covered by the applying forceps.
- ② Low profile
- ② Only one clip applier for all clips

② Clip jaws opening

- ② Designed concept enables a bigger opening of the L-Clip jaws
- ② Better and safer application
- ② Decrease premature rupture danger

L-Aneurysm-Clip ®



D-Aneurysm-Clip ®

- 2020 we introduced the new D-Aneurysm Clips
(unfortunately, just in front of the up-coming Covid 19 pandemic!)
- We combined all positive characteristics from our experience of the L-Clip and Yasargil System and developed the D-Aneurysm Clip System.



Why a new aneurysm clip system?

❶ Because...

...we listened to the market feedback and worked together with leading neurosurgeons to create this ingenious Aneurysm system.

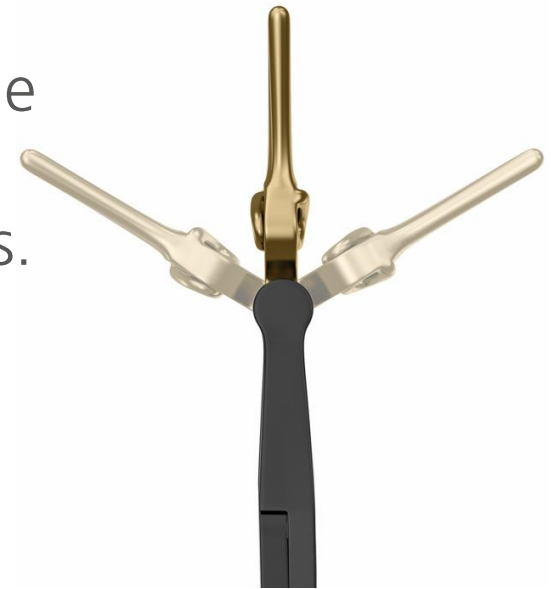
The clip will be opened from the outside and follows the intuitive gripping behavior of the surgeon.



Benefits compared to Yasargil / Sugita

➊ New opening mechanism

- The new opening mechanism enables a total overview of the operating field
- This prevents that the clip is covered by the applying forceps.
- Opening in the same manner as traditional Clip-system
- Low profile
- Only one Clip applier for all clips!



Benefits compared to Yasargil / Sugita

- Clip jaws opening
 - Designed concept enables a bigger opening of the D-Clip jaws
 - Better and safer application
 - Decrease premature rupture danger
 - Ease of positioning of clips due to combination of low clip profile
 - Unique Memory Applier => provides flexibility due bendability
 - Optimal stability during application



Special D-Clips



Paddle Clip

Larger width of jaw instead 1,2 mm → 2,8 mm. This enables to clamp several clips next to each other "Stacking method" or instead of two using one"



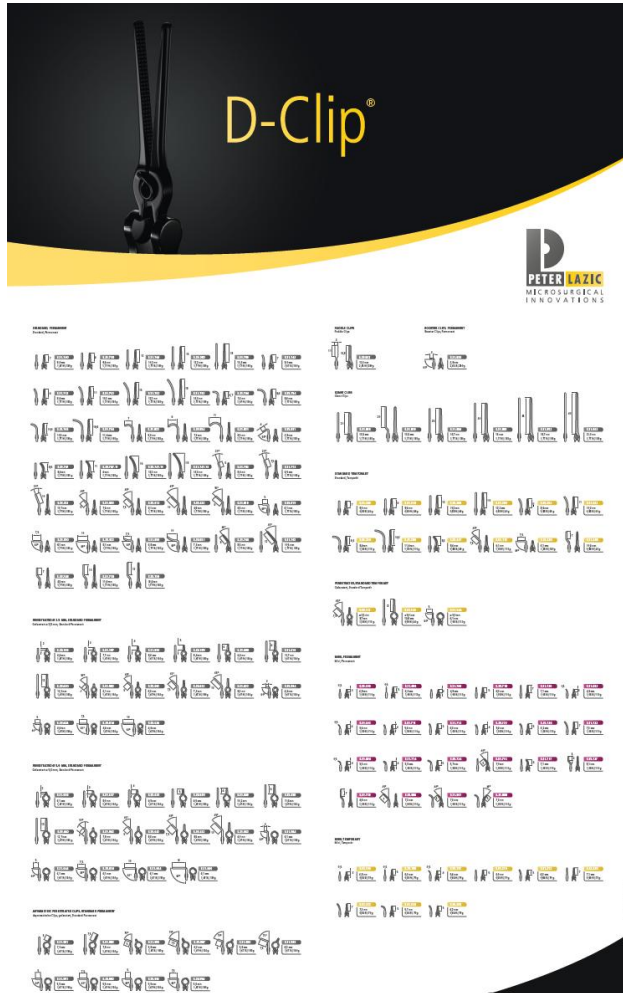
Booster Clip

For special applications with very large aneurysms, extreme vascular changes or as an alternative to the "Stacking method" the booster clip is used to enhance the closing force of a previously applied D-Clip.

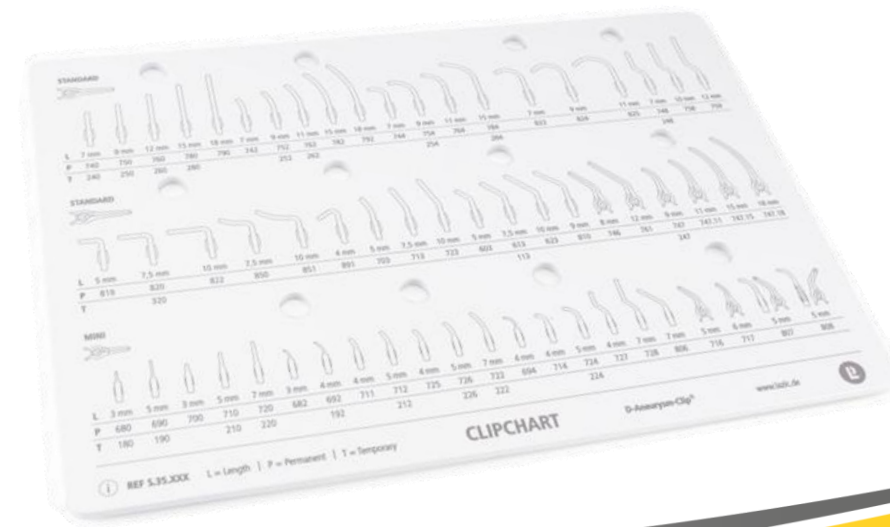
D-Aneurysm-Clip ®



D-Aneurysm-Clip ®

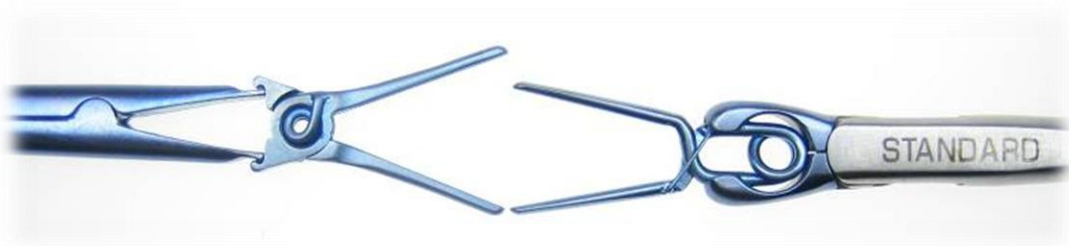


- D-Clips Programm provides 134 different Clipstyles
- 80 Standard Aneurysm Clips include 3.5 & 5.0 mm Fenestrated Clips
- 22 Mini Clips
- 6 Giant Clips
- 2 Spezial Clips (Paddle & Booster Clips)
- 24 temporäre Clips



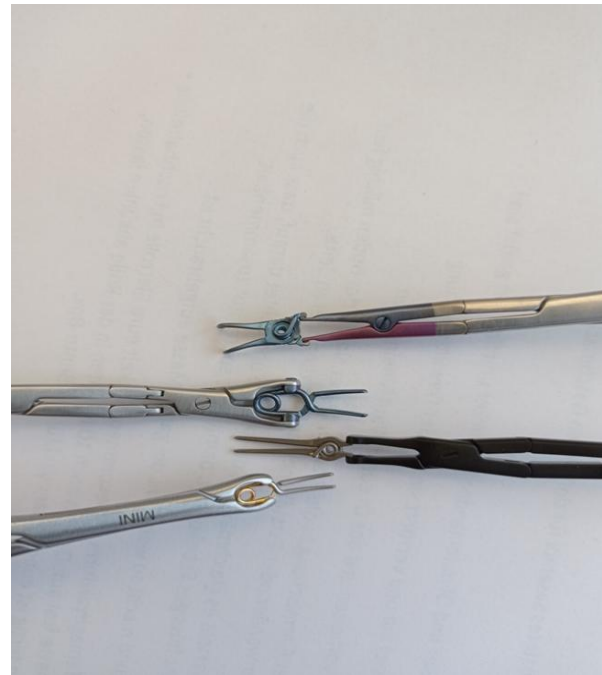
Market problems

- ❏ V-shaped instead of parallel opening of the L-Clip seems to be a problem?
- ➔ Not at all, due to our wide opening angle and atraumatic jaw profile, the integrity of the vessel and aneurysm is assured, and the occlusion is also guaranteed



Market problems

Peter Lazic GmbH is one of the 3 most important world-wide aneurysm clip manufacturer, but the only one world-wide, which offers 3 different clip-systems: D-Clip, L-Clip & Yasargil Clip...



Storage Container

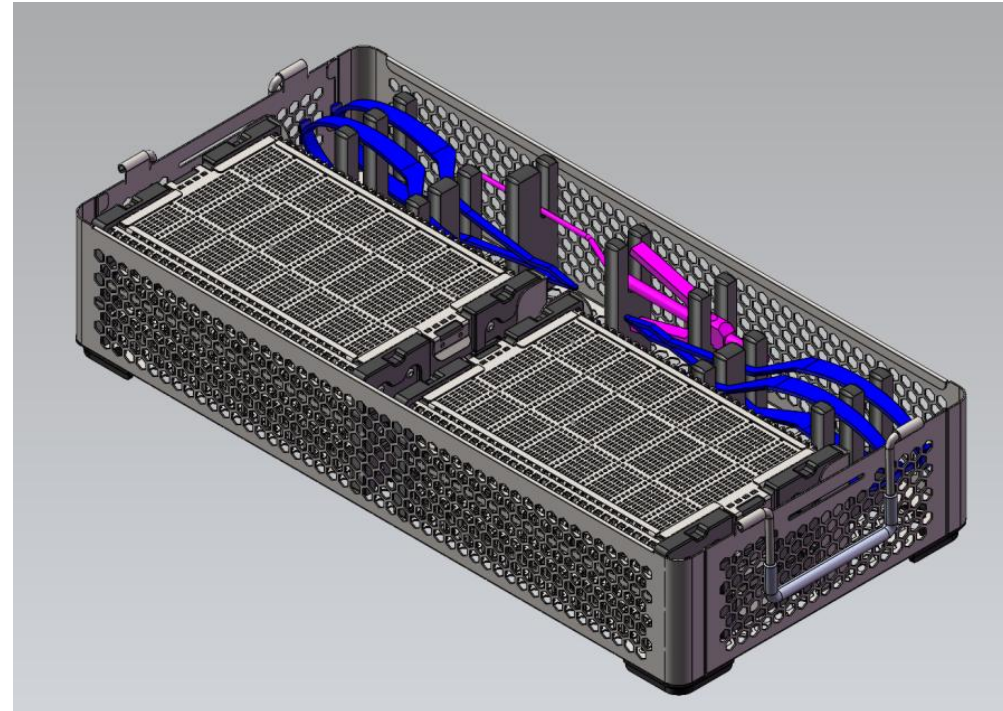
Stacking System
Stapelsystem



Locking System
Containerverschluss



Concept New Storage Container



New Clip Tray:

*1x Big Storage tray
6x Clip Tays (144
Clips)
1x Clip Tray for 24
Clips
5x Applying Forceps*

*Total Weight:
7,6 kg?? Too much??*

THANK YOU
for your
ATTENTION!