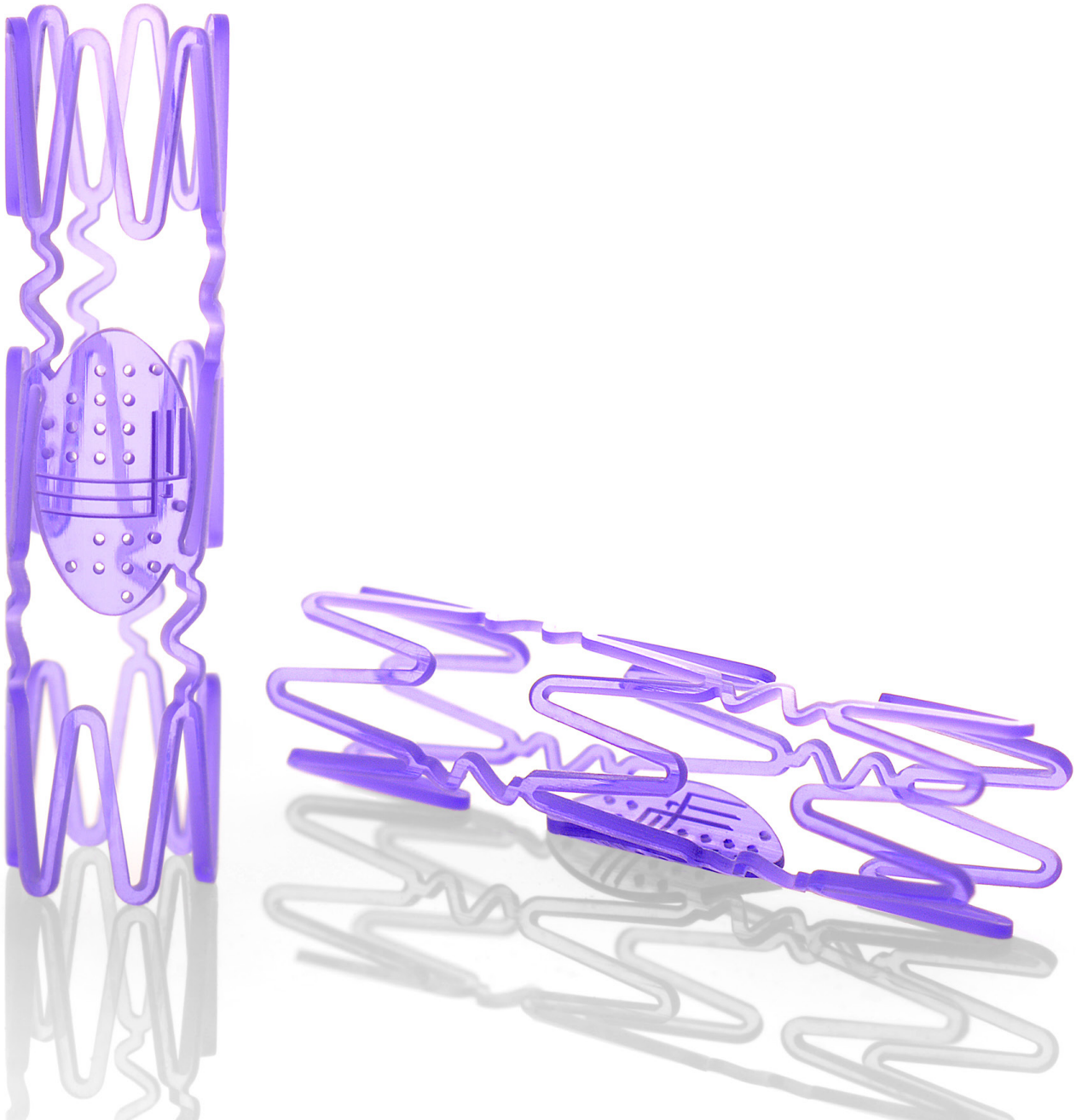
LASERAGE®

The Evolution Of Medical Stents



Introduction

The modern stent manufacturing industry has seen a steady increase in demand in the recent years. In 2014, stent manufacturing revenue has hit $2.2billion with coronary stents comprising 69% of the total industry revenue. Although biodegradable and other stents comprised of only 6% of industry revenue, they have become increasingly popular over the past five years.

PRODUCTS AND SERVICES SEGMENTATION (2014)

69%
CORONARY STENTS

6%
BIODEGRADEABLE AND OTHER STENTS

10%
PERIPHERAL VASCULAR STENTS

15%
URINARY AND PROSTATIC STENTS

Total $2.2bn

SOURCE: WWW.IBISWORLD.COM

Throughout the years, all types of medical stents have seen major improvements and have evolved in design and material due to the advancement of technology. As an industry expert of medical device manufacturing including medical stents and implantable medical devices, Laserage presents a brief history of the evolvement of medical stent manufacturing throughout the years, highlighting the changes in design, technique and more.

Section 1: Brief History of Stent Design

1

First-generation stents were made out of bare metal. Although they helped minimize the risk of the artery collapsing, up to 25% of coronary arteries treated with bare metal stents (BMS) would ultimately experience restenosis again.

2

Most Urinary & Peripheral Vascular stents have been made of Nitinol shape-memory material. This material has been utilized for the self-expanding properties and the super-elastic characteristics. While larger in design than their coronary cousins, the peripheral stents have evolved to now be self-attaching and more flexible for delivery.

3

The later invention of Drug Eluting Stents (DES) has alleviated the risks produced by bare metal stents by minimizing the re-narrowing of arteries by nearly 70%.

4

Once strictly only stainless steel, modern coronary stents are now primarily manufactured from cobalt chromium materials and have since changed from diamond cell shapes, to smaller, thinner designs. Thinner struts offer better flexibility & delivery ease while keeping strength and corrosion resistance intact.

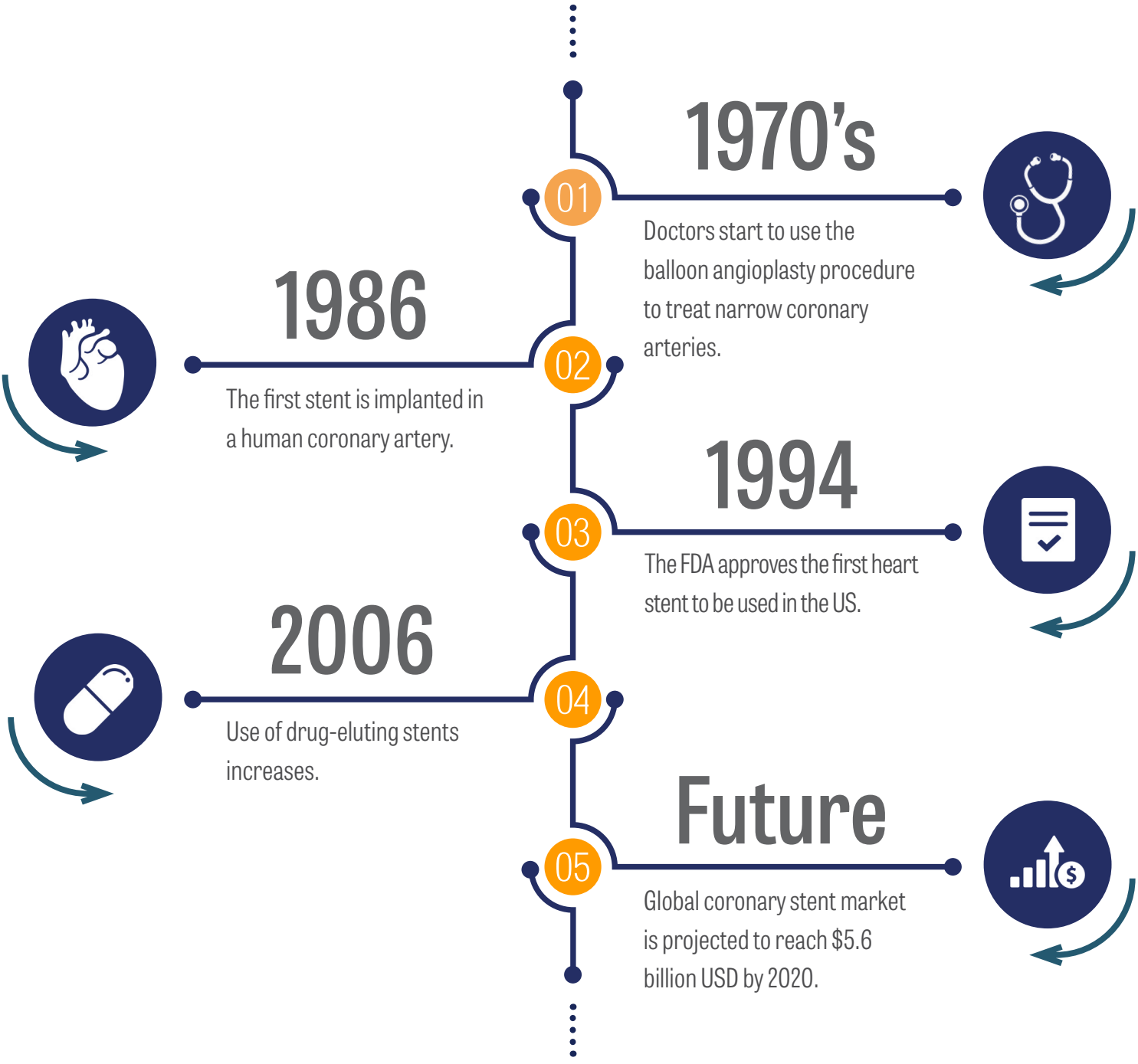
5

Urinary and Peripheral stents are still made of Nitinol, but modern design concepts have made them easier to install and self-attach.

6

Many experts believe biodegradable materials will take over the coronary stent market in coming years to become the new standard. The advantage of not having permanent metal in the artery is balanced by the challenges of manufacturing, storing and inserting these polymer or metal dissolvable material scaffolds.

Section 2: Evolvement Over the Years



Conclusion

As the medical industry continues to evolve with new technologies, Laserage adapts accordingly by providing the most up-to-date manufacturing capabilities and services. With over 35 years of expertise, and through the use of cutting edge laser technology, we provide medical manufacturing services that produce stents with the highest possible reliability, strength and sustainability.

To learn more about stent manufacturing and our laser processing services, **speak with a Laserage expert today**.

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Resource Library

Sources

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