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VISUAL FRACTURE REDUCTION GUIDE

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Introduction

- The product is designed to be used in Intramedullary Nail (IM) surgeries and, more specifically, to facilitate the closed fracture reduction, that is the vertical and horizontal alignment of the bone parts, without making an incision on the skin above the fracture area.
- Today, the fracture reduction is achieved with the use of a x-ray machine.
- Difficult, timely and patient handling is required, along with a constant intraoperative x-ray control, so that a guide wire can be inserted from the central towards the distal part of the fractured bone.

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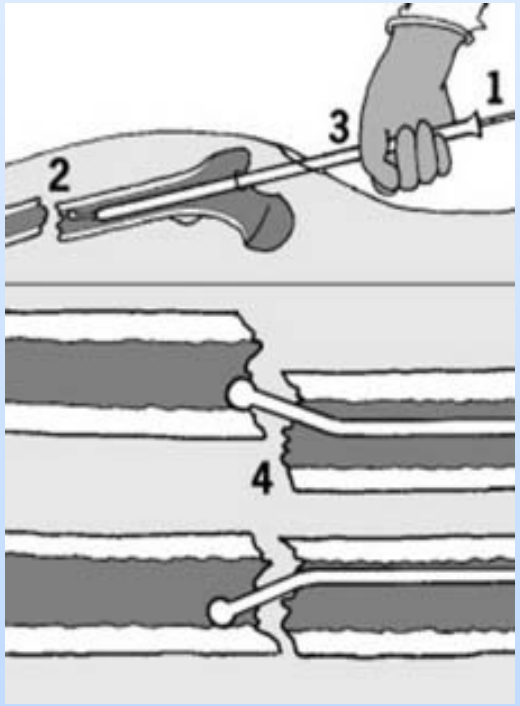

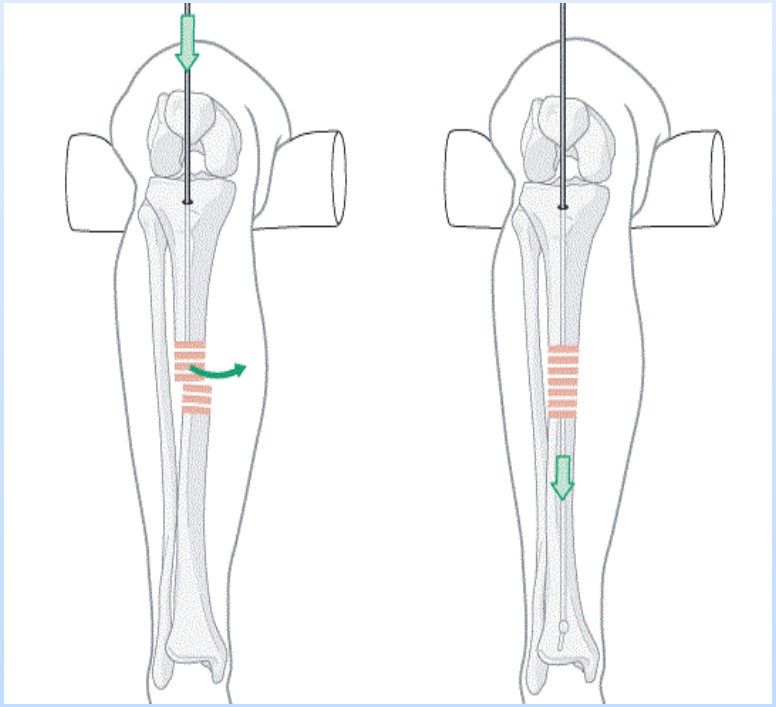

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The problem

- Amount of X-rays needed in order to achieve the fracture reduction (1-5 minutes exposure to radiation per operation, which equates to 40-150 X-rays); X-rays are very harmful for human health and may result in leukaemia or kinds of cancer
- Time needed for an Intramedullary Nail surgery to be carried out (40 minutes-3 hours). The most timely part of the surgery is the fracture reduction
- Danger of traumatizing the patient due to the “blind” method for fracture reduction that is implemented today
- Possible pseudarthrosis
- Blood loss

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The solution

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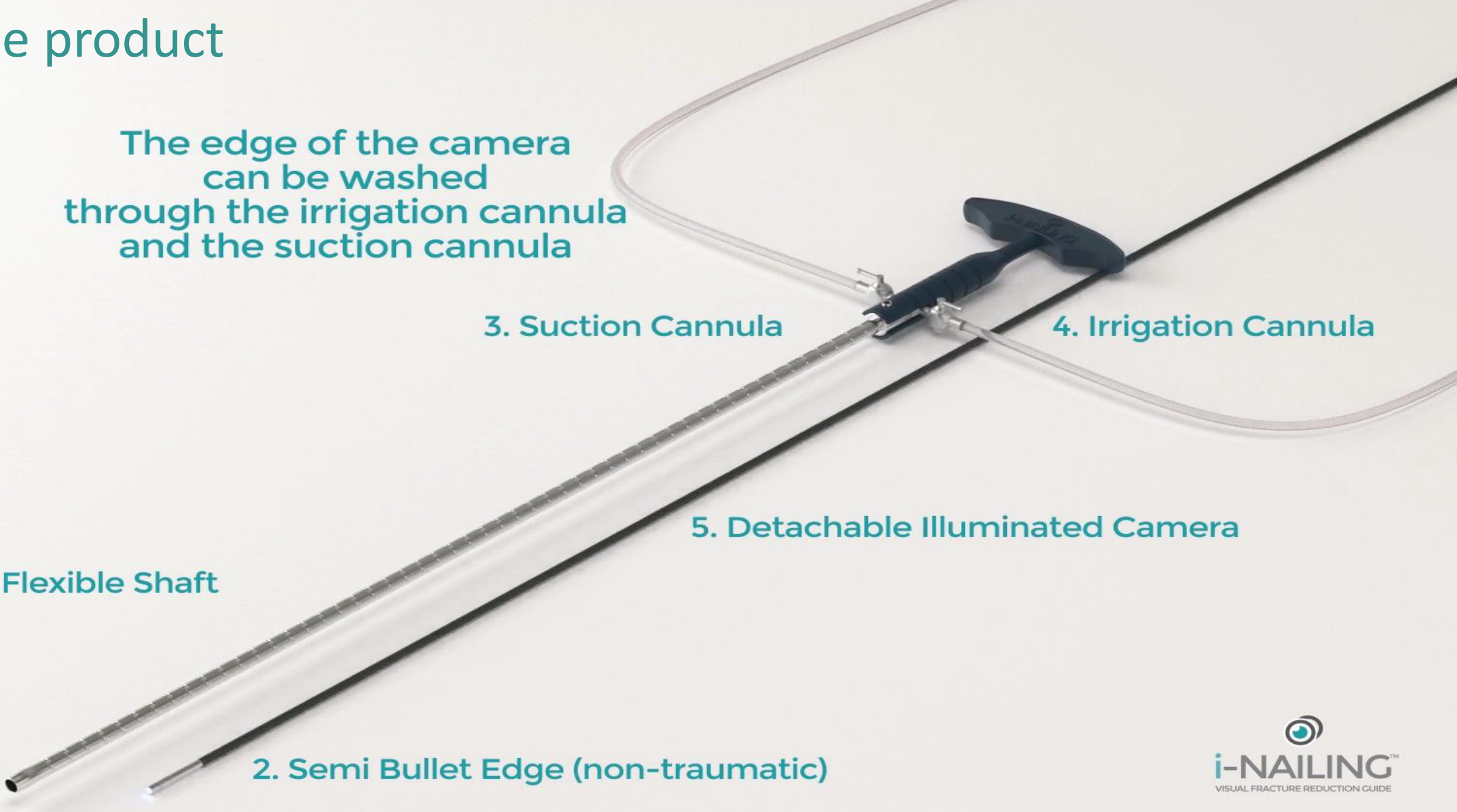
An intramedullary cannulated guide for fracture reduction that bears an endoscopic camera with lighting source at its edge. Fracture reduction is made faster, safer and more accurate.

The product



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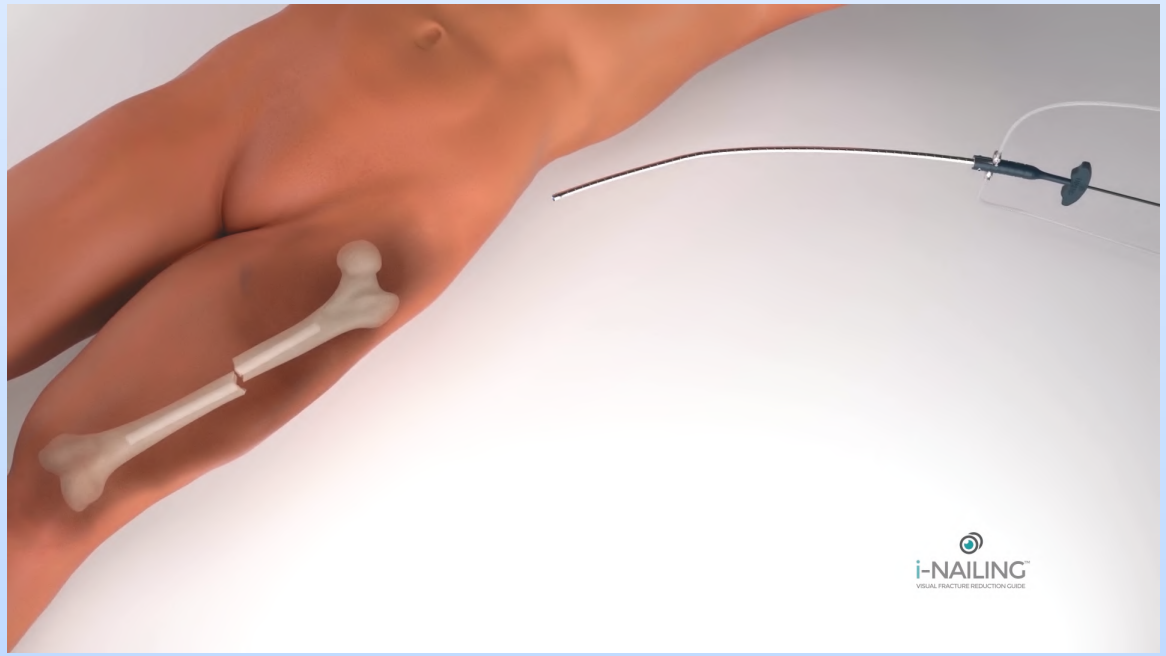
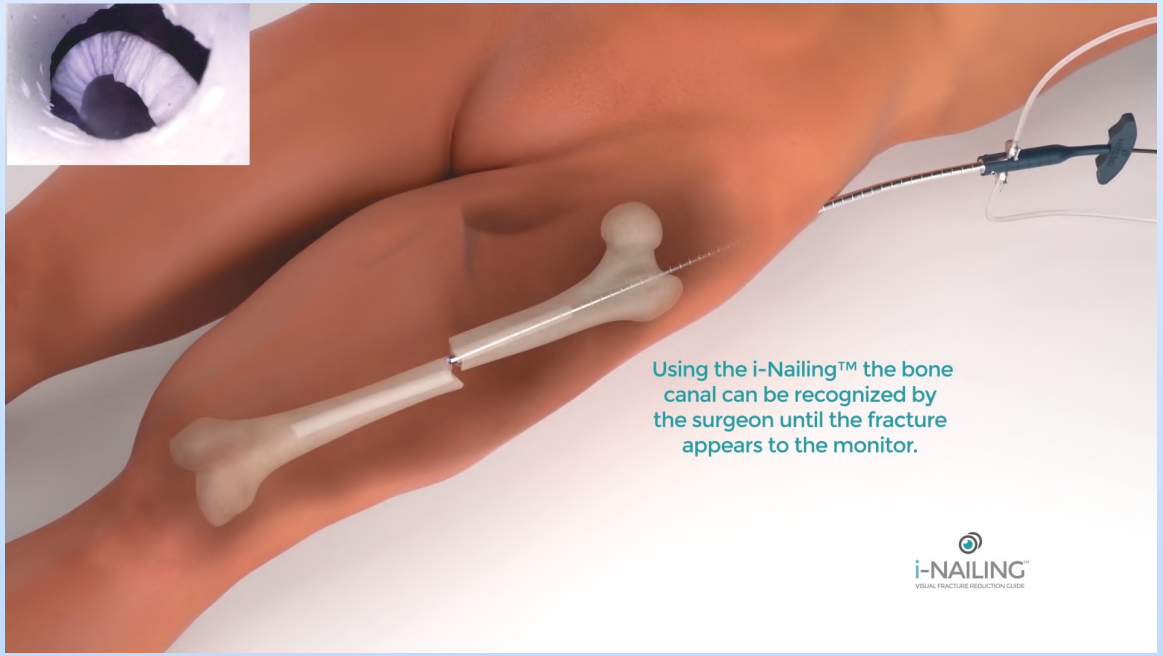
Way of use of the product





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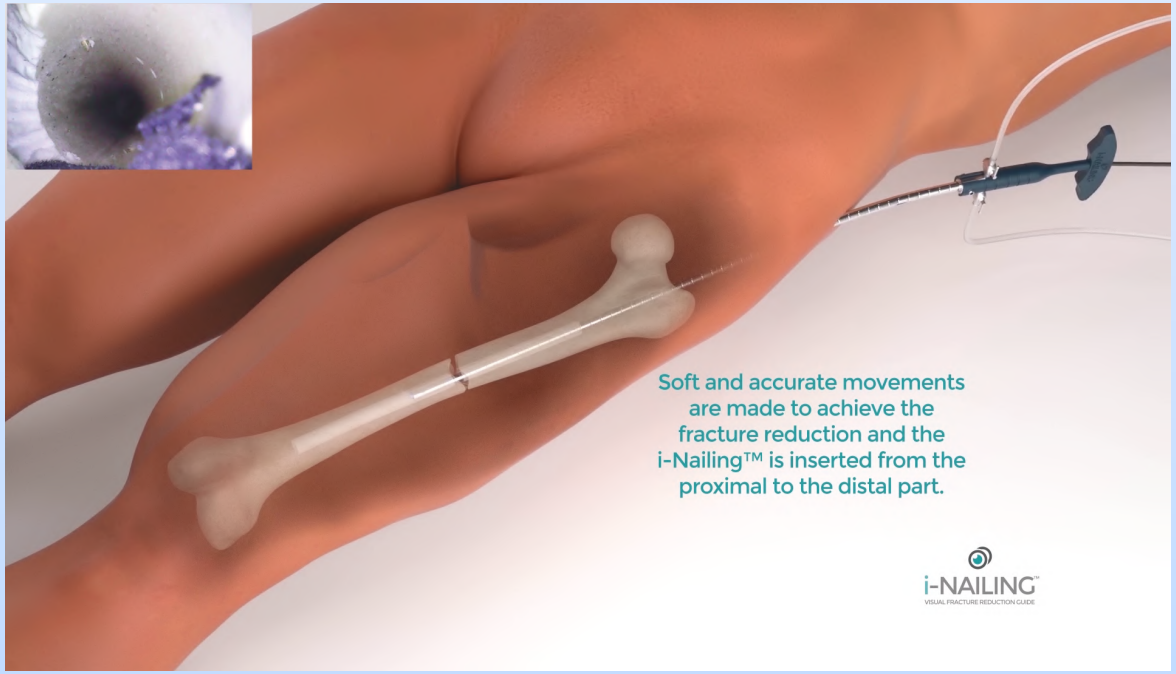
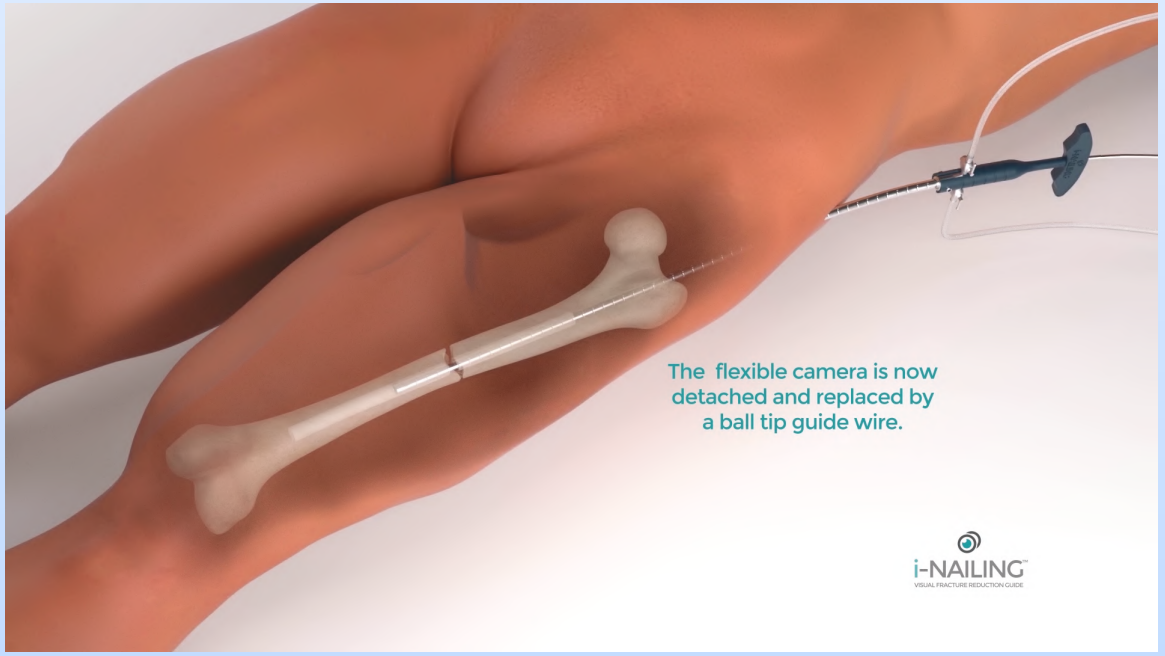
Way of use of the product (2)





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Market size (1)

Indicative numbers

1. Epidemiology of tibial fractures

- Tibial fractures are common long-bone injuries. National Center for Health Statistics cites 492,000 tibial fractures per year in the United States. Open fractures generally occur from high velocity trauma (eg, automobile collision). Closed injuries may occur from falls or sports-related trauma. [...]
- **Source** www.uptodate.com

2. Epidemiology of femoral fractures

- The incidence of femoral fractures excluding the hip has been found to be 37.1 per 100,000 person-years in the United States . Femoral shaft fractures can result from either high-energy trauma or low-energy trauma [....]
- **Source** : www.uptodate.com

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Market size (2)

Typical costs

- **Long bone fracture (treatment cost)**
- Without health insurance, surgical treatment of a broken leg typically costs $17,000 to $35,000 or more. For example, at the Kapiolani Medical Center in Hawaii, repair of an uncomplicated leg fracture[4] costs about $16,082, while repair of a complicated leg fracture[5] costs about $33,565, not including the surgeon's fee. A typical surgeon's fee could reach $2,000 or more, according to Carolina Orthopaedic Surgery Associates[6] .

- **Source** : www.health.costhelper.com

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Competition

- There is no direct competition. The competition is the old technique.
- New product introducing a new approach on how IM surgeries should begin.
- Patent grants a monopole for 20 years.

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Achieved Milestones

- A prototype has been manufactured
- In vitro tests completed
- **Patent** granted in **Greece** ; Patent No 1009366 (Patent application No GR20170100279); **Priority** date from GR Patent Application is June 21st, 2017
- International Patent Application (PCT) before the World Intellectual Property Organization (WIPO) ; PCT/IB2017/057203
  - ➢The **PCT International Phase** has been concluded successfully (International Search Report (ISR) and Written Opinion (WO) has been drafted and are **positive**; The WO states that the invention is new and inventive)
  - ➢We have entered the **PCT National Phase** and validation is pending in the following Offices
    - i) USPTO: Application Number 16615879, filed on November 22nd, 2019
    - ii) EPO: Application Number EP17811718.0, filed on January 07th, 2020
- Trademark granted in Greece

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Team

1. Dimitrios Plakas
   - Founder
   - Health care Professional
   - 15 years of experience in health care
2. Christos Charalabidis
   - Partner
   - Health care Professional
   - 15 years of experience in health care
3. Georgios Perivolaris
   - Legal advisor/Partner
   - 13 years of experience in Corporate, Commercial, Patent & Trademark Law

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