

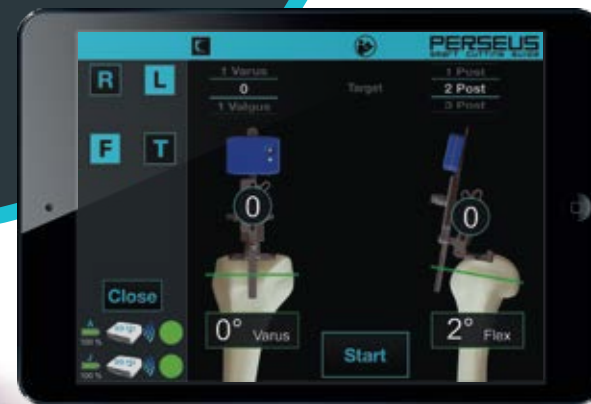
# PEARSEUS

smart cutting guide



# SMART INSTRUMENTS

for Knee Arthroplasty



**PERSEUS**  
smart cutting guide

## ORTHOKEY

**Orthokey** is a young and dynamic company founded in 2005, with ten years of experience in the design of smart solutions for healthcare, based on the integration of clinicians' experiences and new technologies.

Real progress comes when an innovative solution is used in everyday clinical practice. In collaboration with the most prestigious international centers of orthopedic surgery, Orthokey provides high-level solutions for clinicians and companies. Our work is dedicated to those who seek excellence in orthopedics.

Our portfolio includes computer assisted surgical platforms for orthopedics, as well as digital instruments for diagnosis and outpatient rehabilitation assessment.

The efficacy of our solutions is demonstrated by the growing interest shown by our trading partners. Our mission is to improve the performance of our customers providing them customizable tools and taking care of them with an efficient aftersale service.

**PERSEUS** is part of the family of new generation of smart instruments provided by ORTHOKEY.



**PERSEUS is a cutting guide for Knee Arthroplasty designed to achieve optimal bone resections with less effort and comorbidity respect to conventional instrumentation.**

Proper alignment of the prosthesis during knee replacement is critical in maximizing implant survival<sup>[6]</sup> and to reduce polyethylene wear<sup>[1]</sup>. Poor overall anatomic alignment of a total knee replacement is associated with a 6.9 times greater risk of failure due to tibial collapse, that varus tibial alignment is associated with a 3.2 times greater risk<sup>[2]</sup> and valgus femoral alignment is associated with a 5.1 times greater risk of failure<sup>[6]</sup>. To reduce this variability intramedullary instruments have been widely used, with increased risk of the fat emboli rate to the lungs and brain during TKA<sup>[5]</sup> and possible increase of blood loss<sup>[3, 4]</sup>.

Furthermore even with intramedullary rod several cases of malalignment are reported. Orthokey mission is to provide tools for safe and accurate surgery. For this reason Orthokey has designed a surgical smart instrument to achieve optimal resection alignment without violating the intramedullary canal.

**PERSEUS is the first sample of a new generation of smart instruments for knee surgery. It is composed by a minimally invasive cutting guide integrated with disposable sensors that allows to perform femoral distal cut and tibial cut with an orientation error lower than 1°<sup>[7]</sup>.**

PERSEUS is composed by a free App available on Apple Store and by a sensor that communicates via Bluetooth<sup>®</sup> with iPad 3 or superior and iPad mini.

PERSEUS Sensor is disposable and is provided sterile. It connects to the cutting guide without any calibration procedure. The cutting guide can be sterilized in steam autoclave. Cutting guide positioning is less invasive and faster than conventional instruments.

PERSEUS has been designed and validated in collaboration with most prestigious clinical centers. CE and FDA approved.



## PERSEUS ensures:

- Accurate bone mechanical axis detection
- Precise slope and varus-valgus cutting guide positioning for optimal bone resection
- Real-time feedback about resection orientation
- Intraoperative results validation
- Post operative surgical report in PDF

## INDICATIONS

**PERSEUS** is designed for a less invasive approach in every Knee Arthroplasty.

**PERSEUS is fundamental** in all the cases where instrumentation of the medullary canal would be extremely difficult or impossible, such as:

- extra-articular bone deformity
- IM sclerosis
- long-stemmed hip implants
- hardware within the femoral canal that cannot be removed

## Advantages for surgeons



### **More confidence, more safety**

- Avoid risks related to intramedullary nail
- Same precision as navigation system, but less cumbersome and easier to use
- Increased confidence in surgical decisions
- Reduced surgical operating time
- Reduced blood loss compared to IM instruments<sup>[7]</sup>
- Reduced cost and complexity respect to state of the art of extra medullary techniques for knee arthroplasty



## Advantages for hospitals

### **Optimize costs and management**

- Minimal equipment and operative set-up, bringing to reduced sterilization costs
- No cost related to capital equipment, maintenance and software update costs
- Reduced surgical complications risks and related post-operative costs
- Patient faster recovery and early discharge
- Possibility to include PERSEUS into hospital risk management procedures



## Advantages for implant producers

### **Enrich company portfolio**

- Company image: it introduces cutting edge sensor technology into orthopaedic domain
- No management costs related to system maintenance
- Improvement of market share

## PERSEUS features:

- No intramedullary nail
- Disposable
- Touchscreen interface on field
- Integrated with conventional surgery
- Pre-calibrated and sterile
- Only one sensor to guide femoral cut
- Same accuracy as navigation
- Surgical report in PDF

## Bibliography

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#### INFO

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