DePuy Orthopaedics’ implants and instrumentation support success with the Anterior Approach to THA:
• Modular acetabular elements allow an optimal fit for every patient
• TRI-LOCk® Bone Preservation Stem’s shorter length, small profile and unique shape improves soft tissue preservation over the previous generation
• CORAIL® Hip System’s hydroxyapatite (HA) coating has demonstrated success for over 25 years
• Anterior Approach-enabled instrumentation facilitates the approach

The Anterior Approach offers a wide range of patient and hospital benefits. DePuy Orthopaedics gives you the elements you need for success with this innovative approach to a growing market: precision engineered hip elements, intuitive instrumentation, education and field specialist support.

The dramatic benefits of the Anterior Approach are best realized by surgeons who have had detailed training and extensive experience with the procedure. DePuy provides the educational support for THA programs with the Anterior Approach, as described by Joel Matta,*:
• Peer-to-peer training
• Hands-on cadaveric training
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The DePuy Institute, LLC: Comprehensive education to enhance patient outcomes
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References:
In the United States, THA (also referred to as total hip replacement) is a fast-growing procedure with more than 250,000 procedures performed annually. By 2030, the number is expected to reach 730,000. One reason for this growth is the growing underlying disease in most THA patients, and it is mostly related to aging. As the population grows older, the market grows bigger.

However, as shown in the chart below, there are potential patients across the age spectrum, many of whom haven’t been addressed by Anterior Approach THA addressing these issues, patients are trending younger. By 2011, it's expected that half of all THA patients will be under age 65.

Distribution of THA cases by age

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<tr>
<th>Age Group</th>
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<td>19.9</td>
</tr>
<tr>
<td>55-64</td>
<td>25.6</td>
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<tr>
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<td>75+</td>
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Outcomes measure at 6 weeks

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<th>Traditional Interventions</th>
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Outcomes measure at 1 year

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The Anterior Approach for THA

A tissue-sparing approach that provides clinical benefits and reduces costs

- Expect shorter recovery and few post-surgical limitations
- Drive the growth in THA
- Greater durability
- Better access and achieve excellent alignment and positioning of the implants
- The Anterior Approach, as described by Dr. Joel Matta, is performed on a hana® orthopaedic table, which serves to improve access and achieve wound alignment and positioning of the implants. It is an evolution of the “Smith-Petersen” approach, first used in France in 1947 by Dr. Robert Judet. Also known as the “Smith-Petersen” approach, muscles and tendons are separated at the Smith-Petersen interval, rather than cut, resulting in less trauma and more stability.

Early return to function and decline in complications

A 2000 retrospective study of 1152 Anterior Approach THA patients across nine clinical sites found:
- The Anterior Approach
- Early return to function
- Fewer complications when the surgeon has more than 100 case experience
- Overall dislocation rate of 0.6% vs. 2% (three dislocations) requiring implant revision
- Patients were in hospital for a mean 3.4 days, with the majority discharged to home. 60% of patients no longer used an assistive device by four days after hospital discharge. Return to function reached plateau by three months.

In another study comparing 211 Anterior Approach procedures to 293 Anterolateral procedures, faster functional return was found with the Anterior Approach, compared with the Anterolateral approach, with 75% of Anterior Approach patients being sedentary or semisédentary, compared with just 25% of Anterolateral Approach patients. At one year, 33% of Anterior Approach patients were still sedentary or semisédentary, compared with 58% in Anterolateral Approach patients.

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DePuy Orthopaedics supports this innovative approach.

DePuy Orthopaedics, Inc. offers multiple femoral systems and specialized instrumentation designed to complement the Anterior Approach. The design of the TR-LOCK® Bone Preservation Stem and cORaIL® Total Hip System support success with the Anterior Approach to THA.

TR-LOCK Bone Preservation Stem with GRIPTiSM coating provides initial scratch fit and allows tissue ingrowth. 95% survivorship at 10 years. A small lateral shoulder, optimally length, the geometry and curved distal tip for soft tissue preservation facilitates the Anterior Approach.

cORaIL Total Hip System A unique, compact branching system compresses and relieves periarticular bone in the femur, which allows the stem to become bone forming and more efficient. The diameter of the stem facilitates mechanical flexion, minimal bone and soft tissue disruption, providing a stable construct over time. The cORaIL system has demonstrated 98.3% survivorship at 10 years.

Economic and clinical benefits: Reducing THA resource needs

Savings
- The tissue-sparing Anterior Approach offers hospitals significant savings opportunities:
- Shorter inpatient stay—estimated average two to three days of stay in hospital
- Reduced need for rehabilitation and support services and drugs
- Reduced risk of complications from oversedation immobility
- Reduced risk of dislocations
- Capital and running costs typically recovered in 100 cases or fewer
- Improved contribution
- In a study conducted at St. Mark’s Hospital, Salt Lake City, adopting the Anterior Approach resulted in dramatic increase in resource utilization and contribution margins per case. St. Mark’s reported benefits including:
- 27% increased hip replacement utilization (from an average of 17.2 cases per month to 22.5)
- Improved contribution margins per case. 48% for Anterior Approach vs. 46% for traditional THA
- Shorter OR utilization. 2.5 hours vs. 3.10 for traditional THA
- Suitable for a wider range of patient types
- Improved patient outcomes and satisfaction

To view the most recent financial projections of the Anterior Approach, visit the DePuy Orthopaedics website.
The Anterior Approach for THA

Tissue-sparing approach that provides clinical benefits and reduces costs

The Anterior Approach is a tissue-sparing procedure that exposes the hip with a small incision on the front of the hip. The surgeon works between the muscles without dissecting or deforming the muscles and tendons around the hip joint. The Anterior Approach, as described by Dr. Joel Matta, is performed on a hana® orthopedic table, which serves to improve access and achieve better alignment and positioning of the implant. It is an evolution of the “Smith-Petersen” approach, first used in France in 1947 by Dr. Robert Judet. Also known as the “Smith-Petersen” approach, muscles and tendons are separated at the Smith-Petersen interval, rather than cut, resulting in less trauma and more stability.

Early return to function and decline in complications

A 2009 retrospective study of 1152 Anterior Approach THA patients across nine clinical sites found:

• Early return to function
• Fewer complications when the surgeon has more than 100 case experience††
• Low overall dislocation rate of 0.6%; 0.2% (three dislocations) requiring implant revision

Outcomes measure at 6 weeks6

• Full Activity: 75% of Anterior Approach patients vs. 40% of Anterior Lateral patients
• Socks/Shoes: 70% of Anterior Approach patients vs. 30% of Anterior Lateral patients

Outcomes measure at 1 year6

• Full Activity: 85% of Anterior Approach patients vs. 55% of Anterior Lateral patients
• Socks/Shoes: 80% of Anterior Approach patients vs. 60% of Anterior Lateral patients

Increased hip replacement utilization (from an average of 17.2 cases per month to 29.5)

Anterior Approach Solutions

Bone Preserving Stem Options support the Anterior Approach

DePuy Orthopaedics, Inc. offers multiple femoral systems and specialized instrumentation designed to complement the Anterior Approach. The DePuy Tri-LOCK® Bone Preservation Stem and CORAIL® Total Hip System support success with the Anterior Approach to THA.

Economic and clinical benefits: Reducing THA resource needs

Savings

The tissue sparing Anterior Approach offers hospitals significant savings opportunities:

• Shorter inpatient stays—estimated average time to be two days longer in hospital
• Reduced need for rehabilitation and support services and drugs
• Reduced risk of complications from extended immobility
• Reduced risk of dislocations

• Capital and training costs typically recovered in 100 cases or fewer‡

Improved contribution

In a study conducted at St. Mark’s Hospital, Salt Lake City, adopting the Anterior Approach resulted in dramatic increase in resource utilization and contribution margins per case. St. Mark’s reported benefits including:

• 21% increased hip replacement utilization (from an average of 17.2 cases per month to 21.5)
• Improved contribution margins per case: 4.6% for Anterior Approach vs. 4.6% for traditional THA
• Shorter OR utilization: 2.5 hours vs. 3.10 for traditional THA
• Surgery of a wider range of patient types

Improved patient outcomes and satisfaction

The Anterior Approach provides clinical benefits and results in greater satisfaction for patients. Patient satisfaction surveys have shown significant improvement in patient outcomes and satisfaction.
Total Hip Arthroplasty (THA): Growing Demand, Younger Patients

In the United States, THA (also referred to as total hip replacement) is a fast-growing procedure with more than 250,000 procedures performed annually. By 2030, the number is expected to reach 570,000. Other DRGs associated with the primary underlying disease in most THA patients, and it is mostly related to aging. As the population grows older, the market grows bigger.

However, as shown in the chart below, there are potential patients across the age spectrum, many of whom haven’t been considered for THA before because of concerns about time to recovery and the need to return to work quickly. With innovations such as Anterior Approach THA addressing these issues, patients are trending younger. By 2011, it’s expected that half of all THA patients will be under age 65.

Distribution of THA cases by age

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Projections are that these patients will

• Overwhelm current procedures
• Require greater demands on their implants, requiring greater durability
• Expect shorter recovery and few post-surgical limitations

Trends and Projections

• Expect shorter recovery and few post-surgical limitations
• Place greater demands on their implants, requiring greater durability
• Drive the growth in THA

Projections are that these patients will

• Overwhelm current procedures
• Require greater demands on their implants, requiring greater durability
• Expect shorter recovery and few post-surgical limitations

Early return to function and decline in complications

A 2009 retrospective study of 1152 Anterior Approach THA patients across nine clinical sites found:

• An acceptable complication profile
• Early return to function
• Fewer complications when the surgeon has more than 100 case experience
• Loss overall dislocation rate of 0.64%, 0.2% (three dislocations) requiring implant revision

Another study compared 211 Anterior Approach procedures to 253 Anterolateral procedures, faster functional return was found when using the Anterior Approach.

In a study conducted at St. Mark’s Hospital, Salt Lake City, adopting the Anterior Approach resulted in dramatic increase in

Improved contribution
• Reduced risk of dislocations
• Reduced risk of complications from extended immobility
• Reduced risk of infections
• Shorter inpatient stay—estimated average two days less length of stay in hospital
• Reduced need for rehabilitation and support services and drugs
• Shorter OR utilization: 2.5 hours vs. 3.10 for traditional THA
• Improved contribution margins per case: 49.6% for Anterior Approach vs. 44.3% for traditional THA

Economic and clinical benefits: Reducing THA resource needs

Savings

• Improved contribution
• 25% increased hip replacement utilization (from an average of 17.2 cases per month to 22.5)
• Improved contribution margins per case: 48.6% for Anterior Approach vs. 44.3% for traditional THA
• Shorter OR utilization: 2.5 hours vs. 3.10 for traditional THA

Anterior Approach Solutions

DePuy Orthopaedics systems support this innovative approach.

Anterior Approach to THA:

Solutions

• Improved patient outcomes and satisfaction
• Suitable for a wider range of patient types
• Shorter OR utilization: 2.5 hours vs. 3.10 for traditional THA
• Improved contribution margins per case: 48.6% for Anterior Approach vs. 44.3% for traditional THA

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Bone Preserving Stem Solutions support the Anterior Approach

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TR-LOCK Bone Preserving Stem

GRIPTON® coating provides initial scratch fit and allows tissue ingrowth. 98% survivorship at 10 years. A small lateral shoulder, optimized for easy cementation, reduces the footprint of the stem and allows for improved offset, providing optimal offset and effective bone support.

CORAIL® Total Hip System

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Current THA surgical approaches

Choosing the best approach for THA

Current THA surgical approaches fall into three main categories based on the location of the incision and the interval used to access the hip joint:

• Posterior
• Lateral
• Anterior

Traditionally, most THAs have been performed through the Posterior or Lateral approach. In a “minimally-invasive” small incision approach, these approaches require significant cutting and sectioning of both muscle and ligaments.

In contrast, the Anterior Approach does not require significant cutting and sectioning of both muscle and ligaments. These approaches require significant cutting and sectioning of both muscle and ligaments.

Because of these new, increasing demands, hospitals will need to keep pace with innovations that provide significant clinical and revenue benefits.

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The Anterior Approach is a tissue-sparing procedure that provides clinical benefits and reduces costs

Traditional Anterolateral Scores

Harris Hip Pain Score

Outcomes measure at 6 weeks

• 20

• 25

• 30

• 35

• 40

• 45

• 50

• 55

• 60

• 65

• 70

• 75

• 80

• 85

• 90

• 95

• 100

Socks/Shoes (%)

Outcomes measure at 1 year

• 20

• 25

• 30

• 35

• 40

• 45

• 50

• 55

• 60

• 65

• 70

• 75

• 80

• 85

• 90

• 95

• 100

Stairs No Banister (%)

Full Activity (%)

Socks/Shoes (%)
DePuy Orthopaedics provides the elements for success with the Anterior Approach to THA, with hip systems, instrumentation, and field specialist support.

DePuy Orthopaedics' modules and instrumentation support success with the Anterior Approach to THA:

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DePuy Orthopaedics is pleased to offer a comprehensive Anterior Approach for Total Hip Arthroplasty value dossier upon request. A value dossier is a detailed review of clinical and economic information about a treatment or course of therapy. In addition, an economic opportunity analysis for the integration of the Anterior Approach with DePuy Orthopaedics' bone-preserving stems into your hospital portfolio is available on request.

Please contact your DePuy Orthopaedics sales representative to request the input forms for the analysis and for additional information about the range of products and services we provide to our customers.

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DePuy Orthopaedics’ innovations that help hospitals address the full spectrum of challenges in providing THA
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