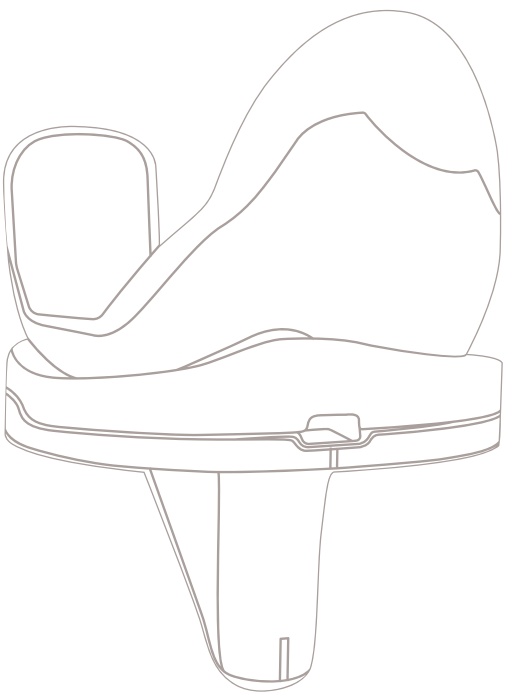
CUSTOMIZE PERFECTION



ZIMMER BIOMET

When the Functional approach meets the Anatomical approach...

1980年代，兩種全膝關節哲學並行，功能型主張利用不對稱的股骨設計提供更好的關節活動，解剖型主張利用更高包覆的關節面為膝關節提供穩定，直到2015年，原本平行的兩條線終於結合在一起，最完整的系統問世了

Functional approach

1986
Miller/Galante
CR Femur

1994
NexGen
System

1985

1995

2002
NexGen
High-Flex

2005

2015

#Persona

Anatomical approach

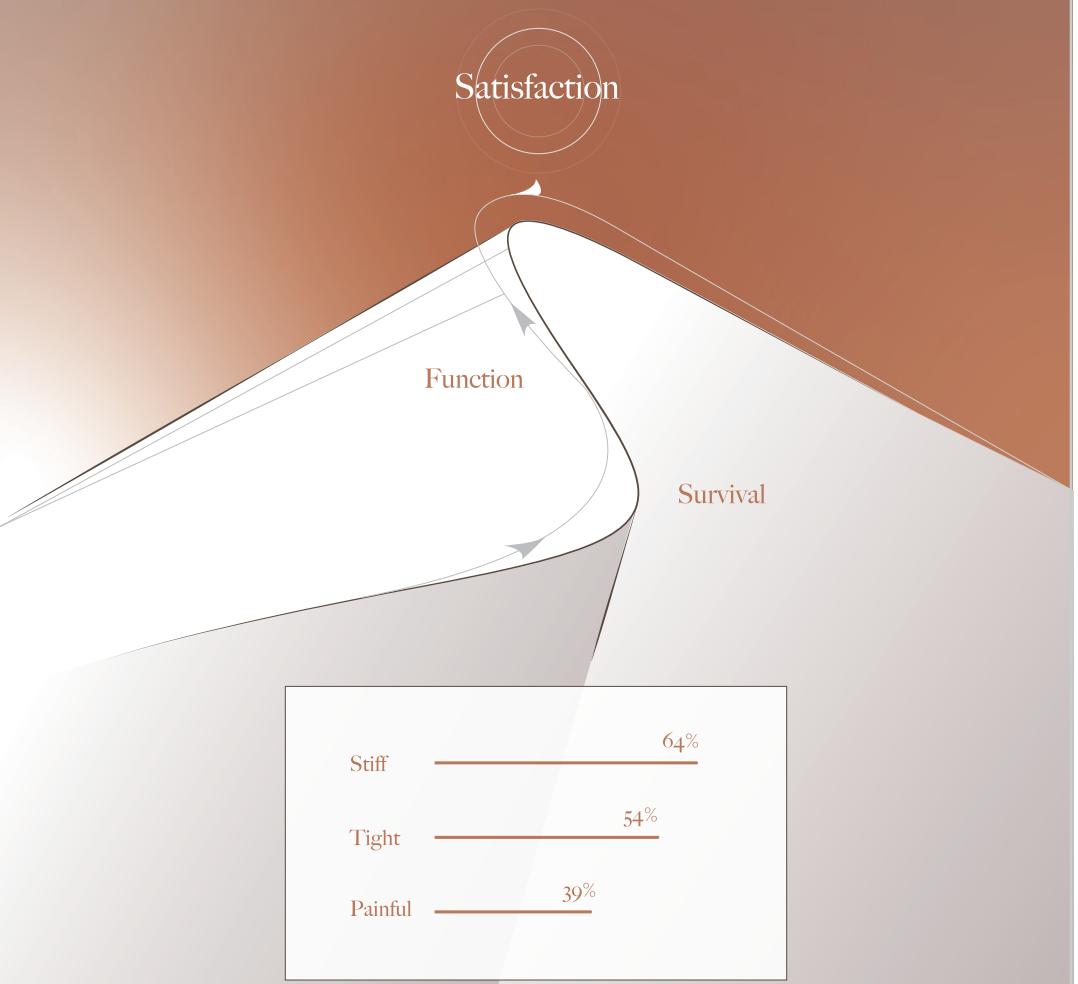
1985
Natural-Knee
Ultracongruent
Insert

1995
Natural-Knee II

2007
Natural-Knee
High-Flex

With the pronounced survivorship
and function we see
even further..

SatisfactionMatters



全膝關節手術術後不滿意原因主要為疼痛、剛硬。

研究顯示術後疼痛，88% 有脛骨擺位內轉的問題，而其中全膝關節置換翻修 26% 與脛骨有關[1]。

同時，股骨的Overhang也是造成膝關節疼痛剛硬及角度受限的原因之一。

Persona參考了超過 5000 位真人的數據，其中包括了亞洲人種的骨形及運動模式，提供了更多的Size選擇，從傳統4mm降至2mm一個Size，同時降低節骨量保存更多的骨本，打造出最符合客製化精神的關節假體。

FitMatters

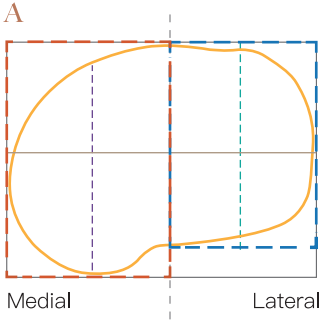
When you don't have to compromise coverage or alignment..

Persona 解剖型的脛骨設計，相較於傳統對稱脛骨形狀，可以降低假體內轉之風險，最大化脛骨覆蓋。研究顯示，解剖型脛骨設計可以達到92%的骨覆蓋範圍，同時降低為了取得外轉而選擇較小的假體，更符合亞洲人需求[2-3]。

設計一個解剖型脛骨，對脛骨平台的理解尤為重要。因此在設計Persona脛骨時，參考了脛骨內外A/P之大數據(A)與重現前內側與前外側之弧度(B)。與一般單純對稱、非對稱型脛骨假體有極大區別[4]。

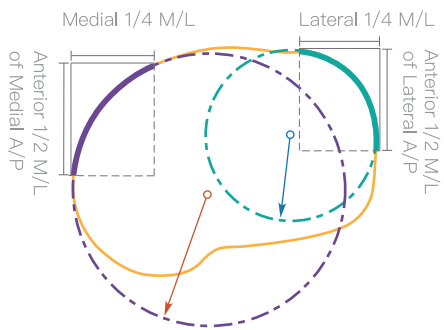
ShapeMatters

A



- Neutral Rotational Axis
- M/L Width
- Lateral A/P Dimension
- Medial A/P Dimension
- Bounding Box
- Medial Bounding Box
- Lateral Bounding Box

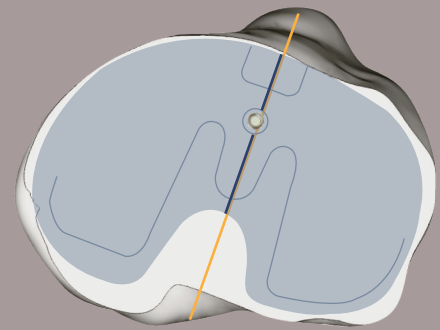
B



- Data sampled for lateral anterior circle fit
- Data sampled for lateral anterior circle fit
- Lateral anterior circle
- Medial anterior circle
- Medial anterior radius
- Lateral anterior radius

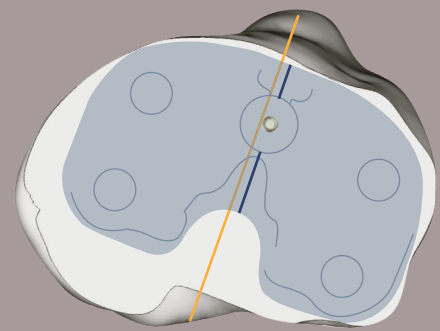
Persona size E

IE Rotation	0.2°
Overhang	0.6mm
Coverage	90.5%



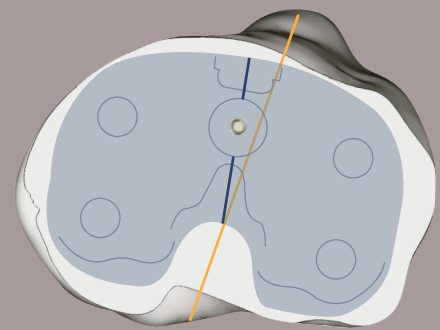
Symmetrical Tibia 3

IE Rotation	−0.0°
Overhang	0.0mm
Coverage	82.1%



Symmetrical Tibia 4

IE Rotation	10.6°
Overhang	0.0mm
Coverage	85.7%

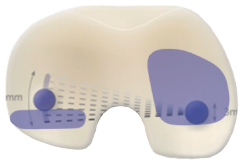


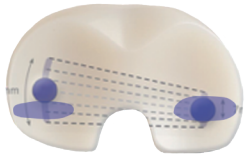
When the motion meets stability..

Medial Congruent 擬真襯墊設計模仿健康膝關節的內外髁移動，還原最精細的膝關節運動模式，增加內側的 Conformity 使接觸面積增大，在 PCL 保留及不保留皆可的情況下，利用 anterior high wall設計增佳穩定同時保持良好的活動[5]。

MovementMatters

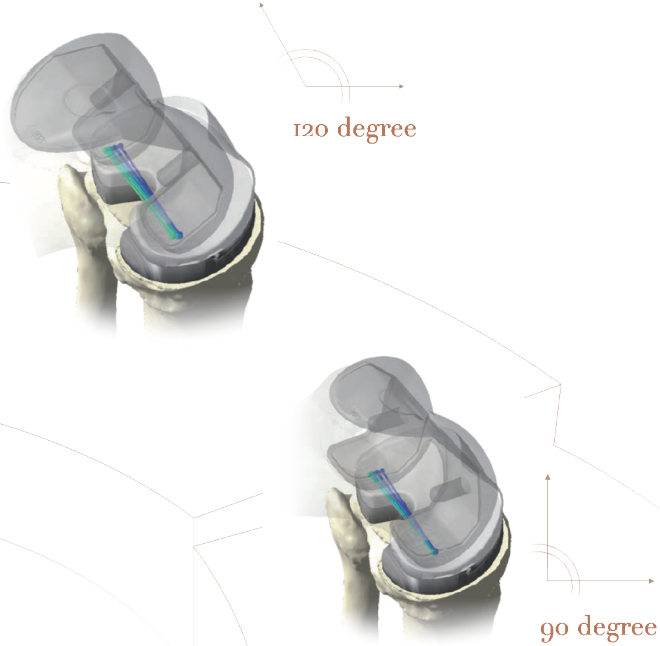
MC vs CR





Medial
A/P translation through flexion:
—Medial: 3 mm
—Lateral: 11 mm

Lateral
A/P translation through flexion:
—Medial: 7 mm
—Lateral: 14 mm



STRENGTH
機械強度

WEAR
磨損

OXIDATIVE STABILITY
氧化穩定性

黃金三角 缺一不可

When the wear resistance crossover the Anti-oxidation...

襯墊新革命，耐磨性與機械強度建立於氧化穩定性上，維他命E襯墊可有效降低氧化降解（Oxidative degeneration），有效提高在體內耐久度，增加使用年限。

OxidationMatters

E 襯墊 比 傳統襯墊[6]

襯墊磨損 96%	磨損後PE分子 95%
拉伸屈服強度 16%	Post疲勞強度 10%
抗剝落效能 >36x	

Persona

PROVEN TECHNOLOGY BUILT ON A LEGACY OF CLINICAL PERFORMANCE

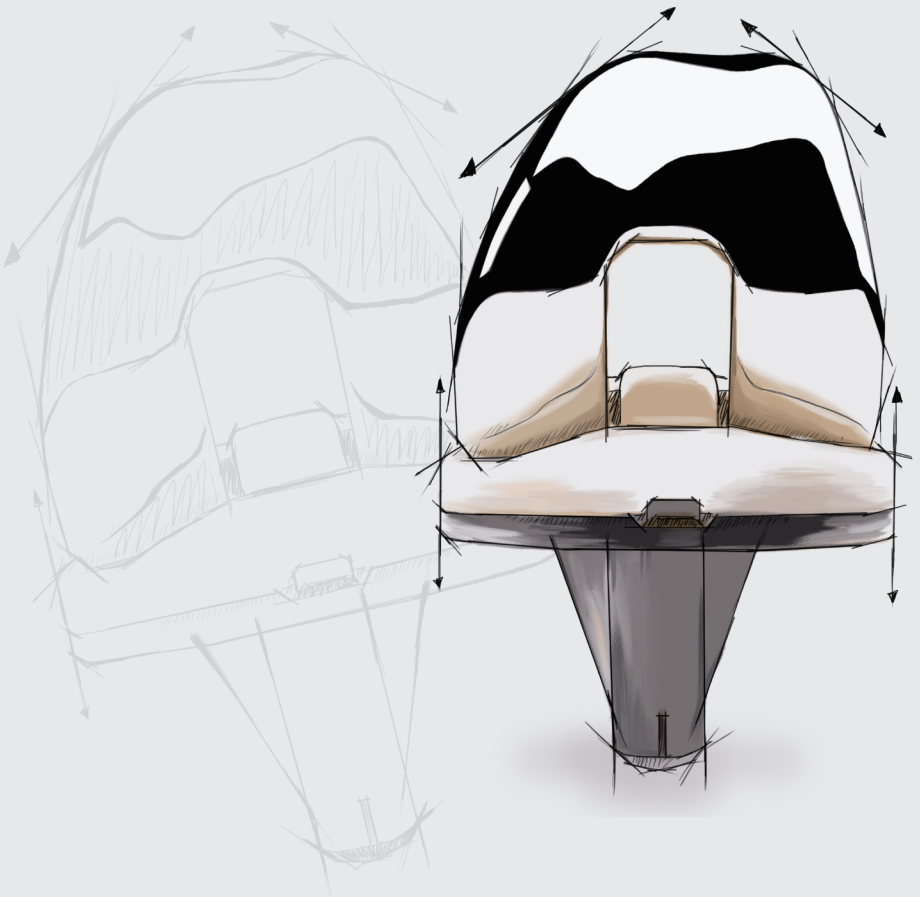
經典傳承，嶄新卓越，承襲了Nexgen優良的臨床成果，結合了過去設計之大成，臻於完美。

30 年 300 + 臨床 Paper
翻修率最低的人工關節
5 百萬 + implanted
每 5 個人工膝關節就有一個是 Nexgen
13A* ODEP rating

If I see further it is by standing on the shoulders of giants - *Isaac Newton*

HERITAGEMATTERS

Personalized



Femur

- Finest increments in size (2mm)
- Better bone conservation
  (Posterior 30%, Box 11%)
- Asian Friendly Design

Insert

- 3rd Generation of vitamin E poly
- Anti-oxidation and maximized durability
- MC option recreate native movements

Tibia

- Anatomical design based on big data
- Bone coverage up to 92%
- Significantly decrease malalignment

Persona

YOUR CHOICE MATTERS

Reference

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