Classification of short stems

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Useless definition of short stems

Implant shorter than 12 cm  Patel RM JBJS 2013

Metaphyseal or upper diaphyseal stem fixation  McTighe JBJS 2013
Classification according to the level of osteotomy and femoral length

1. capital osteotomy (resurfacing)
2. subcapital osteotomy
3. base of neck osteotomy

Double of distance from the tip of great trochanter to the base of the small trochanter (line 4) above: small stem; below: standard stem

below line 5: diaphyseal stem

Feyen H., Schimmin A.J.
Is the length of femoral component important in primary total hip replacement
Bone Joint J 2014; 96-B:442-448
Classification according to the level of osteotomy and femoral length

Examples

right side
straight stem
base of neck osteotomy

left side
short stem
subcapital osteotomy
Jerosch classification

Kurzschaft ist nicht gleich Kurzschaft – eine Klassifikation der Kurzschaftprothesen

Short stems are different – a classification of short stem designs

OUP 2012: 1 (7-8)

- Neck containing designs
- Neck partial preserving designs
- Neck resection designs
Jerosch classification

**Cut 1998**  
**Silent 2003**

**ColloMis 2009**  
**C.F.P. 1999**  
**Pipino 1978**

**Nanos 2004**

**Minihip 2007**

**optimys 2010**

**neck containing designs**

**neck partial preserving designs**

**Proxima 2006**

**Mayo 1985**

**Metha 2004**

**Short Stem ESKA 2009**

**Fitmore 2007**

**Neck resection designs**
„Pfeil“ classification

- Head guided designs
- Neck guided designs
- Calcar guided designs
- Intertrochanteric guided designs
- Diaphyseal guided designs (short straight stems)
"Pfeil" classification

- **Resurfacing**
  - ColloMis 2009
  - C.F.P. 1999
  - Pipino 1978

- **Head guided designs**
  - Nanos 2004
  - Minihip 2007

- **Neck guided designs**
  - Cut 1998
  - Silent 2003

- **Calcar guided designs**
  - optimys 2010
  - Mayo 1985
  - Metha 2004
Example of a calcar guided design

The stem position depends on the geometry of the calcar and the level of osteotomy
„Pfeil“ classification

- Proxima 2006
  - Intertrochanteric guided designs

- Short Stem ESKA 2009
- Fitmore 2007
  - Diaphyseal guided designs
Publication Babisch: planning with different short stems

valgus

varus

CCD average
# 19 short stems – Germany 2010 - offset and length reconstruction ability

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Differences in bone preservation
disappearing from the market

resurfacing

Cut 1998  Silent 2003

head guided designs

neck guided designs

Calcar guided designs


Klinik für Orthopädie und Unfallchirurgie im St. Josefs-Hospital Wiesbaden
• Cementless CUT femoral neck prosthesis: increased rate of aseptic loosening after 5 years.
• Ender SA, Machner A, Pap G, Hubbe J, Grashoff H, Neumann HW.
• Source
• Department of Orthopedic Surgery, Otto-von-Guericke-University, Magdeburg, Germany. stephan.ender@medizin.uni-magdeburg.de, Acta Orthop. 2007
disappearing from the market

- Calcar guided designs mostly persist
There exist a big variety of different short stems
There exist different classifications

Each short stem is different!
Greetings from St. Josefs-Hospital Wiesbaden Germany