

HOW TO CEMENT A KNEE

CEMENTING TECHNIQUE & HANDLING OF BONE CEMENT

HANDLING PHASES



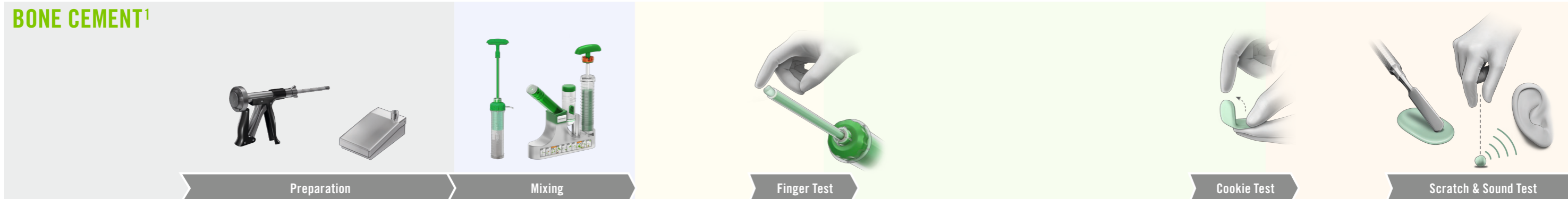
SURGERY TIBIA^{2,3}



SURGERY FEMUR^{2,3}



BONE CEMENT¹



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CEMENTING TECHNIQUE KNEE

Even though there is no general consensus on a cementing procedure in the knee, some essential steps are well-studied and widely agreed upon.^{1,2,3,4} Cement application and handling tips are equally valid whether tibia and femur component are cemented in one stage or in two separate steps.

DOUBLE-LAYER TECHNIQUE

Also known as “Double-Butter” or as “Sandwich” technique: Application of bone cement on the prosthesis as well as on the cut bone surfaces prior to implantation.

For interdigitation and prevention of fat contamination.

Step 1: sticky on prosthesis
Step 2: tack-free on bone



HANDLING TIPS

Save time

On the prosthesis, bone cement may be applied while it is still sticky.

⚠ For the use on bone surfaces, bone cement must be tack-free!

Cut, don't pull

Excess bone cement should be cut in order to avoid that bone cement is not pulled away from underneath the prosthesis.

Know your application window

Bone cement is ready for application on bone when it is tack-free (Finger Test). The end of the working time is reached when bone cement no longer adheres itself (Cookie Test).

When to change gloves

- Before cement use
- After direct contact with bone cement
- Before the prosthesis is implanted

Be quick with the implant

After application of the bone cement on prosthesis and bone, insert the implant without delay.

How about keel, stem and pegs...?

There is no clear consensus as to whether they should be covered with bone cement: Please always check the instructions of the implant manufacturer.

BONE CEMENT

PHASE ADEQUATE HANDLING OF BONE CEMENT²

The following tests can be performed to determine the handling phases of the bone cement. The bone cement's reaction to these tests can indicate the next steps in the cementation process.

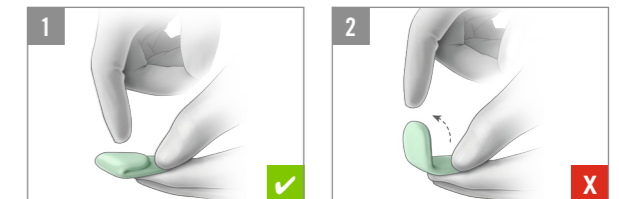
Finger Test

- Is the bone cement ready for application on bone?
1. Bone cement sticks to the glove → not yet ready
 2. Bone cement is no longer sticky → ready



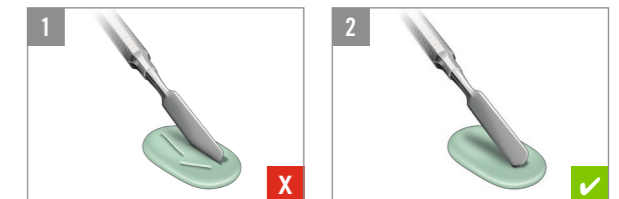
Cookie Test

- Is it still possible to insert/reposition the prosthesis?
1. Cookie sticks → bone cement is still workable
 2. Cookie unfolds → prosthesis must be held in position



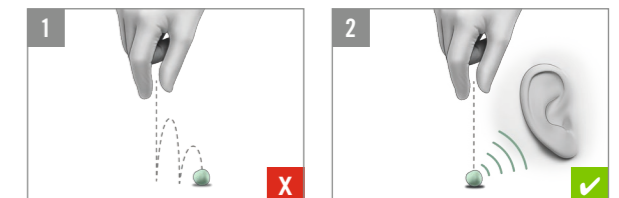
Scratch Test

- Can I start to reduce the joint?
1. Scratching possible → hold prosthesis in position
 2. Scratching not possible → bone cement is completely hardened, start with joint reduction



Sound Test

- Can I start to reduce the joint?
1. Bone cement bounces & soft sound → hold prosthesis in position
 2. Clear metallic sound → bone cement is completely hardened, start with joint reduction



Looking for more insights on how to perform these tests?

Access our PALACADEMY® video tutorials

