



During the Sticky Phase, the bone cement becomes tack-free

What happens during the Sticky/Waiting Phase?

Immediately after mixing, the bone cement reaches a dough-like consistency which is still stringy and sticky. To be ready for application, however, it must be tack-free. Even though this consistency is reached in a relatively short time, this transition period is also known as “Waiting Phase”. Depending on the type of cement and even more on the temperature inside the operating room and the bone cement itself, this phase can last any time between approximately 20 seconds up to 2.5 minutes (the cooler the cement and the surroundings, the longer). In practice, standardized procedures and usage of the same cement will lead to a predictable time slot.

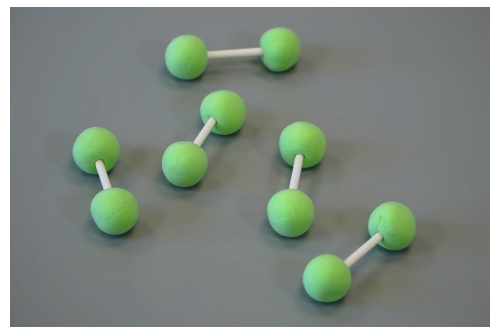


End of the Sticky Phase

At the end of this phase, the bone cement is tack-free and ready for application.

The chemistry behind the Sticky Phase

The methyl methacrylat present in the monomer liquid polymerizes to PMMA and forms a matrix. The polymer particles in the powder are gradually incorporated into this matrix. Once the ratio of free monomers declines, it is no longer possible to dissolve monomer from the dough. After this point, the dough is no longer sticky.

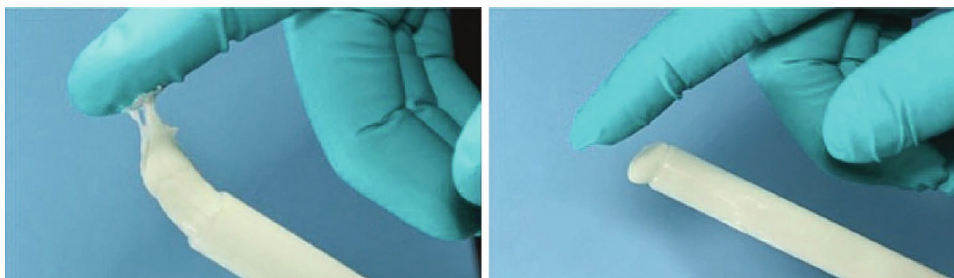


Chain formation

When is the bone cement ready for use? Finger test

Touch the bone cement gently with a finger:

- If the bone cement adheres to the glove, the dough viscosity is still too low (that is, sticky or “hairy”) and it should not be used.
- If the glove remains bone cement free, the bone cement is ready to use in the patient.



Finger test 1: bone cement sticks to the glove and is not yet ready for use

Finger test 2: no longer sticky – bone cement is ready for use

Literature

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