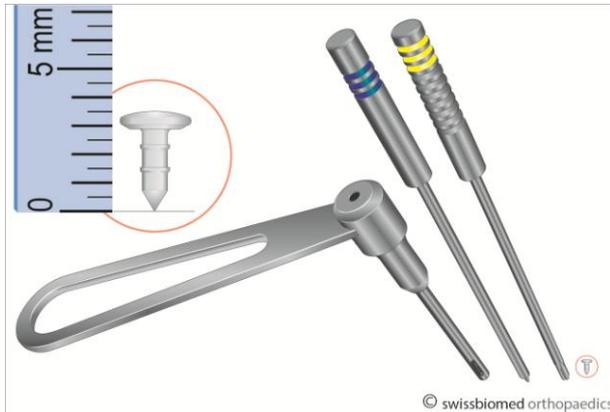


SURGICAL TECHNIQUE: *this technique can be applied by Arthroscopy or open*



- **Guide**
- **Puncher (Blue Marking)**
- **Applicator (Yellow Marking)** come within a sterilization instrument box
- **The Pin:**
 - LeadFix, 3.5mm long
 - Head-Diameter: 2.5mm
 - Poly(L,DL)-Lactid 70/30



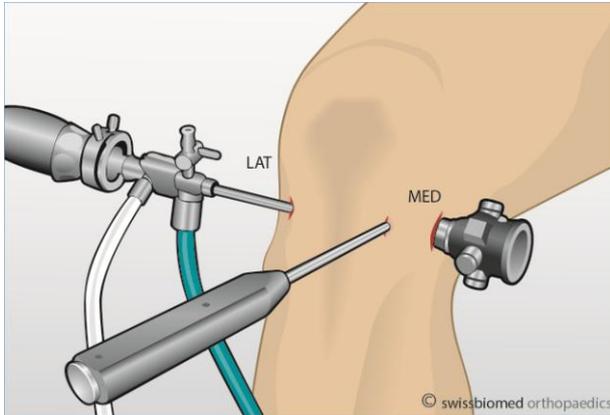
Pin Placement

*The pins are spilled from the sterile vial into a sterile bowl. **The pins are placed with tweezers into the perforations in the instrumentation box***



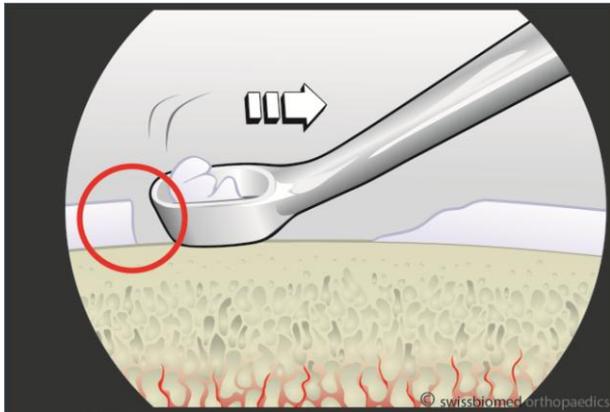
Evaluation of the cartilage defect:

- *Localization?*
- *Concomitant injuries?*
- *Defect Size?*



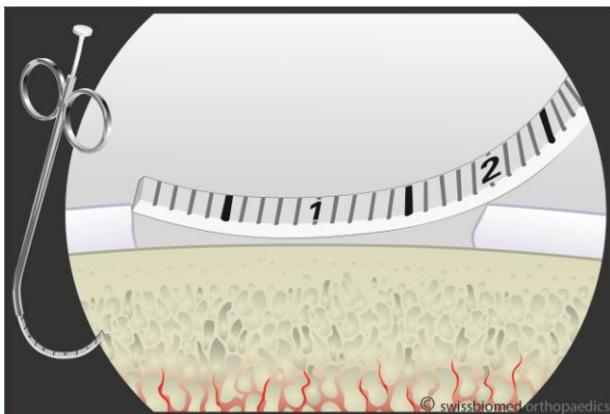
3 Portals (e.g. Defect is in the medial condyle):

- Anterolateral = **Visualization**
- Medial = **Matrix Insertion**
- Anteromedial = **Pin Insertion**

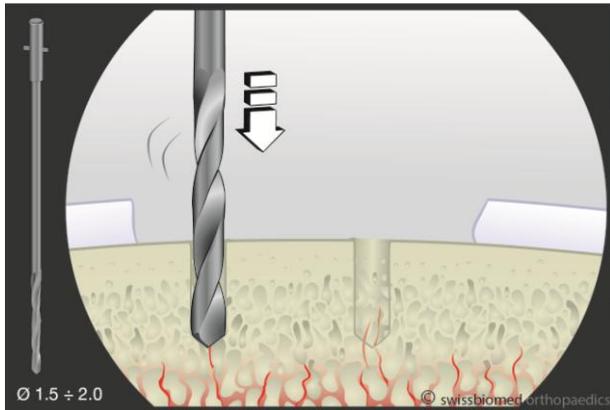


Defect Preparation

- Removal of loose/damaged cartilage with curettes until healthy tissue is exposed
- Preparation of a stable defect shoulder



Measurement of the defect size

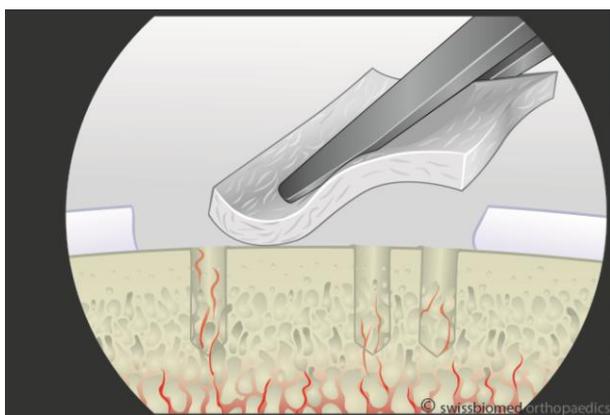
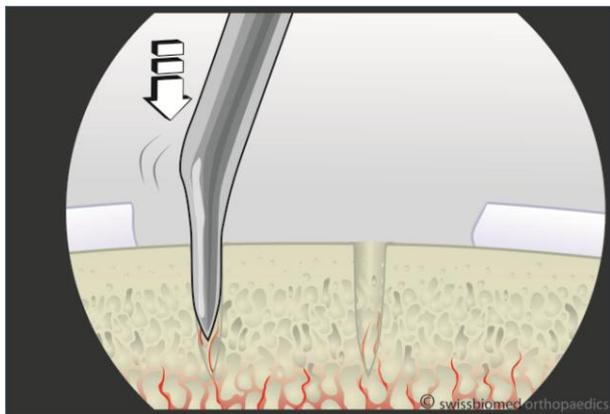


Microfracture

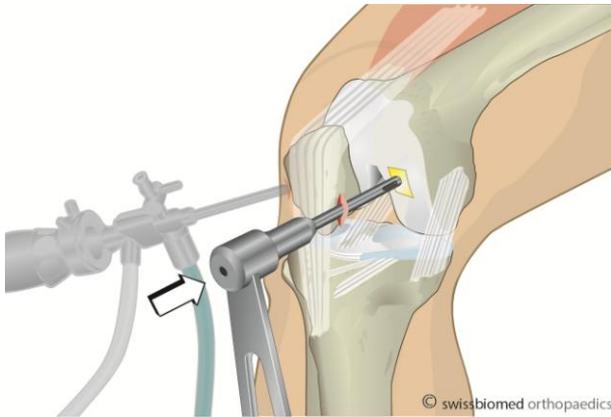
Perforation of subchondral bone

- with **K-wires or small drill bits** (Diameter = 1.5-2mm)
- with **angled picks** ("**chondropick**")

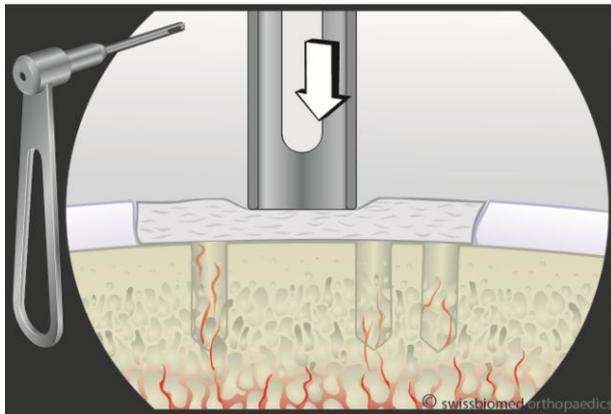
3-4mm apart from each other, with a depth of approx. 4-5mm



*Matrix is **cut to match the defect size and inserted** through the medial portal*

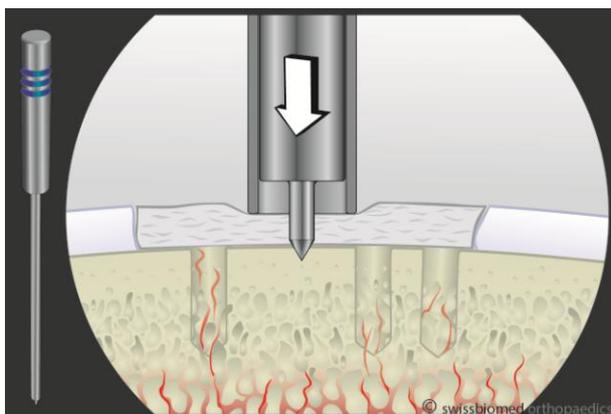


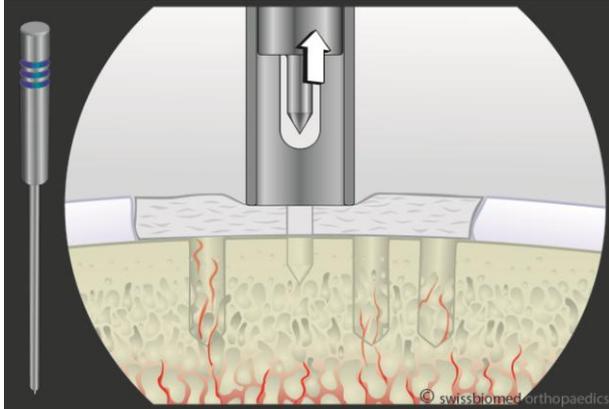
Matrix is hold in place by the **Guide** (Anteromedial portal) at the location where the pin shall be placed



With the **Punch-Instrument (Blue Marking)** inside the Guide, a hole is hammered through the Matrix.

It is important to hammer to the complete stop. The puncher has a stopper at the handle which prevent going too deep





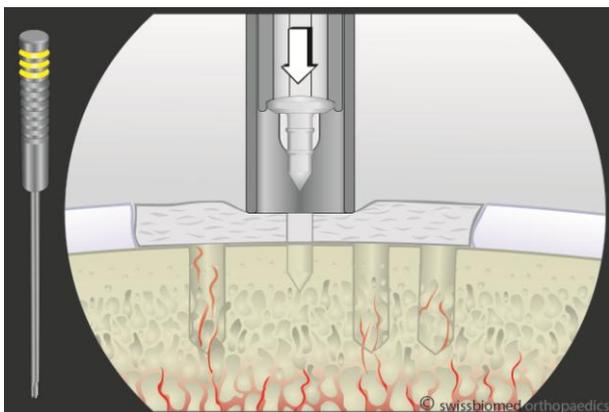
Holding the Guide in place, the Punch-Instrument is removed from the Guide.

It is extremely important keeping the guide in place without shifting it. Even small shift of the Guide will make the following Pin insertion into the prepared hole impossible.

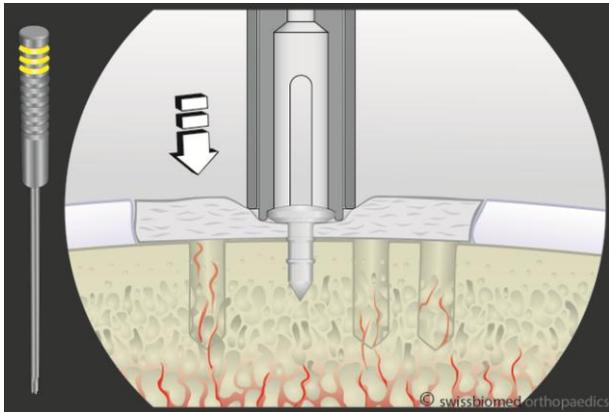


The pin is seized with the Pin-Applicator (Yellow Marking) by slightly pressing it over the pin-head.

The surgeon's assistant may perform this step and pass the Applicator with the pin to the surgeon



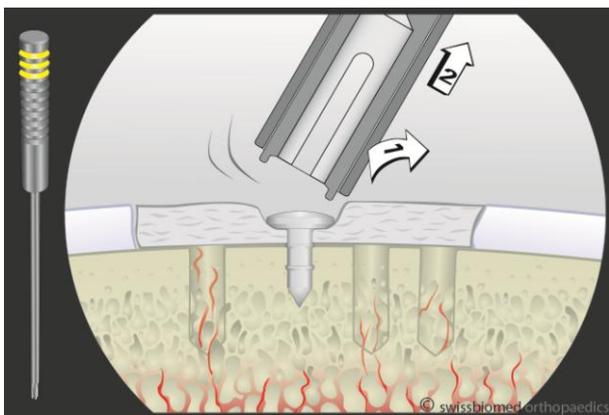
The Pin is introduced through the Guide to the Matrix at the location where the hole was prepared



Hammering the pin through the matrix into the prepared hole:

- light 1-2 hits at first
- harder hitting until the pin is completely inserted into the bone

Only a complete insertion allows the release of the pin and the Applicator removal



By **simultaneous pushing and slight tilting of the Applicator** the pin gets released