

## 牙髓病學 Endodontics

# The Art and Science of Cleaning and Shaping

臺北醫學大學 牙醫學系  
主授老師：謝松志老師  
endo@tmu.edu.tw

## 學習目標

All students must be familiar with the development of endodontic theory and practice and an evidence-based approach that permits an intelligent evaluation of current and future technologies and materials.

## 參考資料

- Principle of Endodontics Pathway of the pulp

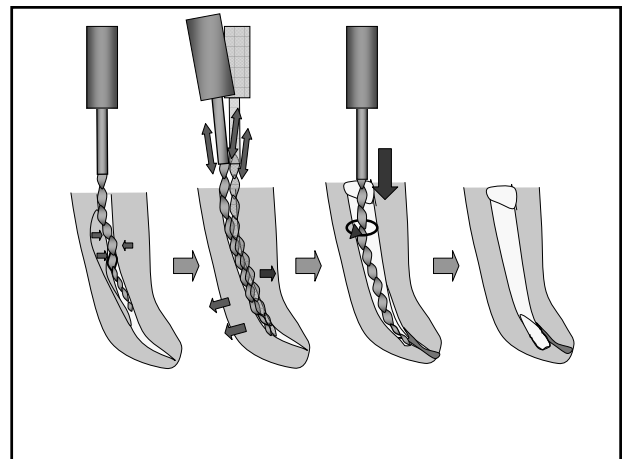
## Summary

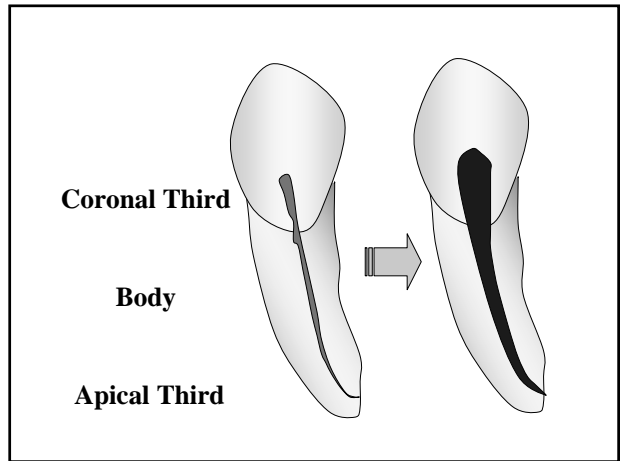
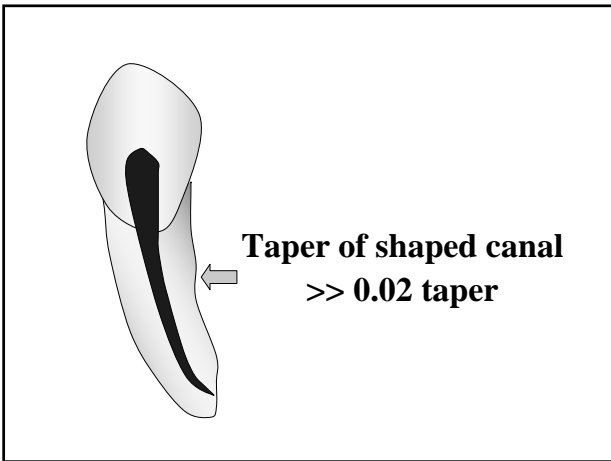
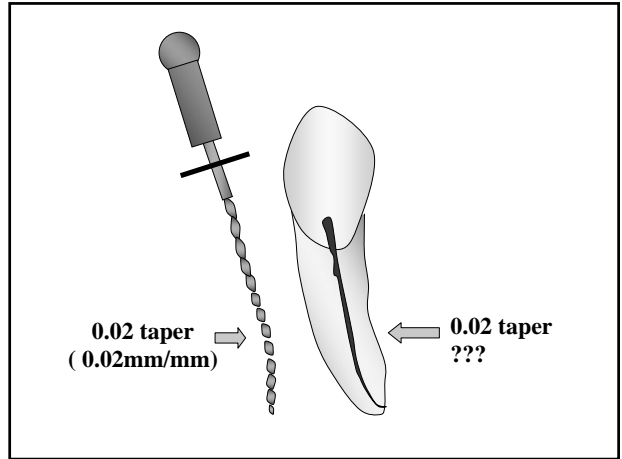
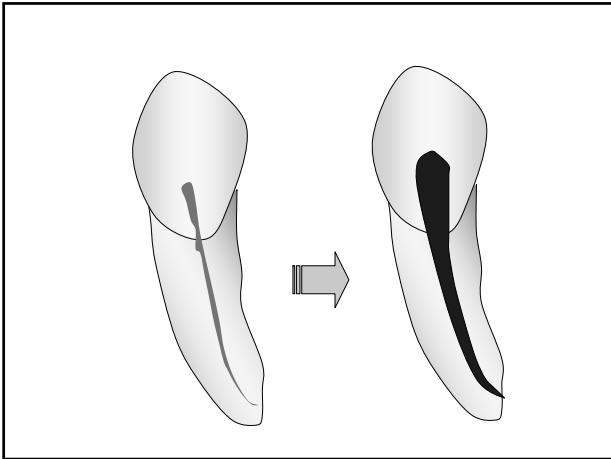
- Rationale of Endodontics  
Anatomy and Embryology of the Pulp  
Pretreatment and Rubber Dam
- Diseases of the Pulp
- Endodontic diagnosis and emergency management  
Endodontic Radiography
- Endodontic Instruments and materials
- The Art and Science of Cleaning and Shaping
- The device and application of the Ni-Ti instrument in the endodontic treatment
- The Art and Science of Obturation—
  - Vertical Compaction of Warm GP Technique
  - Lateral Compaction Technique

## Summary

- Surgical Endodontics
- Apexogenesis and Apexification
- Endodontic Traumatology
- Diagnosis and Management of Combined Perio-endo Problem  
Treatment planning /Endodontic Mishap /retreatment
- Apex Locator  
Tooth Bleaching
- Laser endodontics  
digital radiography / CT in Endodontic treatment
- 醫療環境與心理層面  
Treatment planning /Endodontic Mishap /retreatment

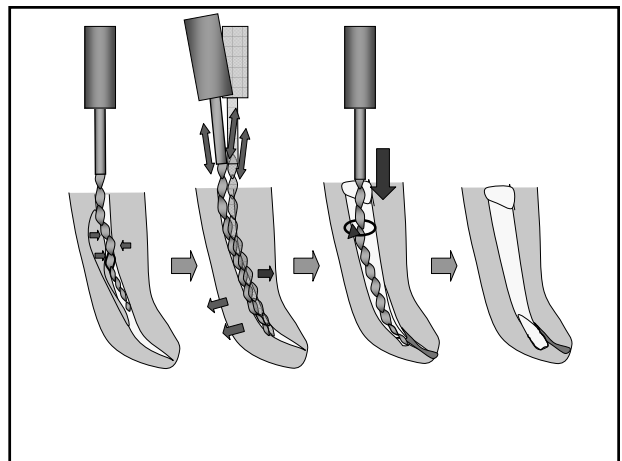
# The Art and Science of Cleaning and Shaping

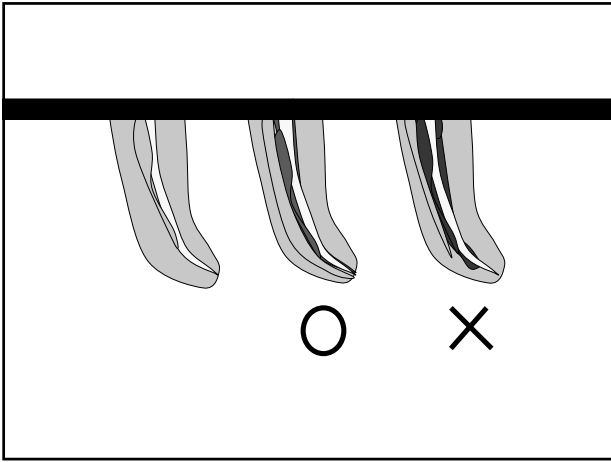




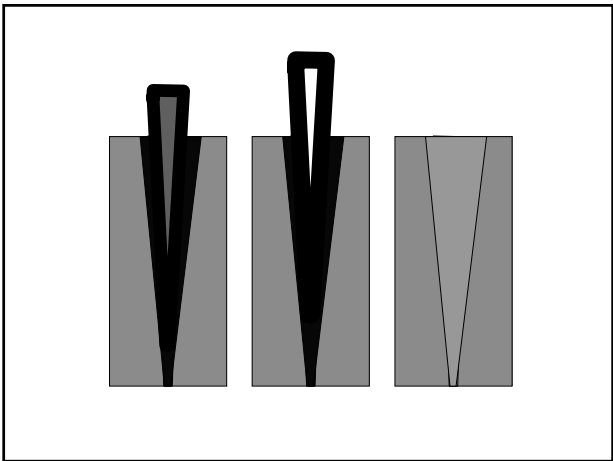
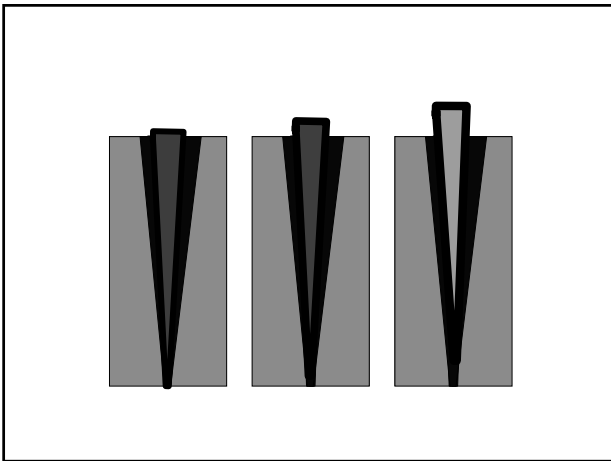
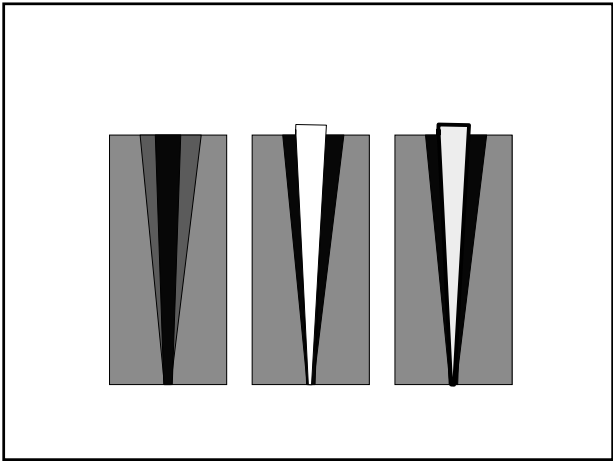
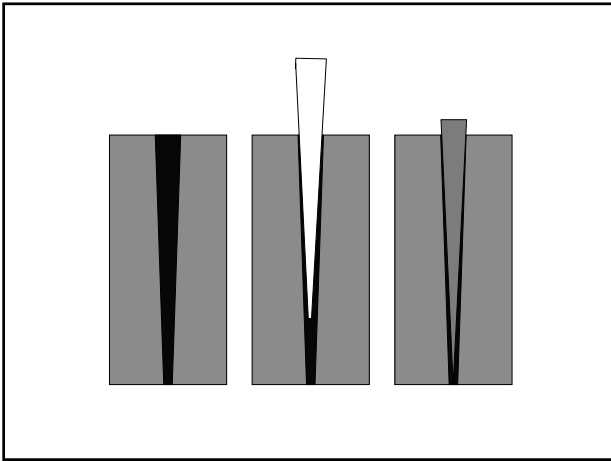
**Four reasons fail to working length**

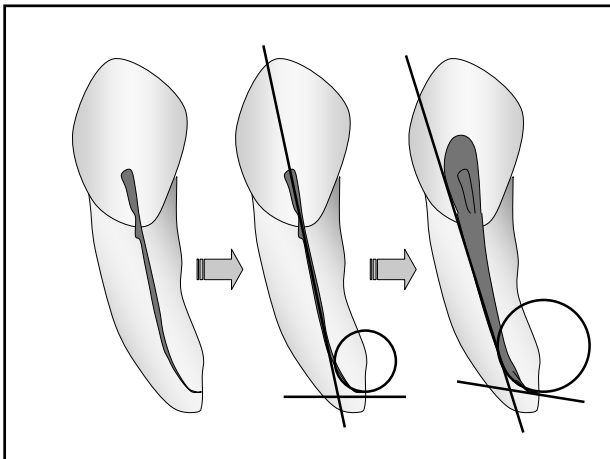
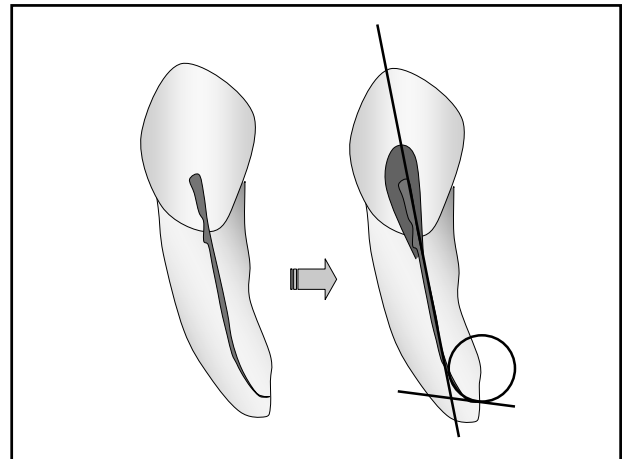
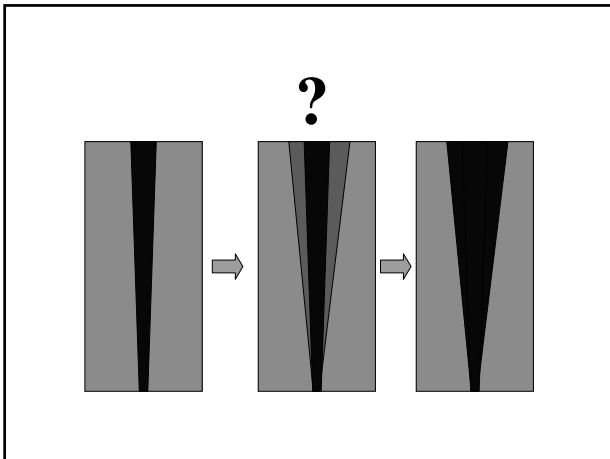
- Canal body interference
- Files fail to adapt the curvature of the canal
- Instrument is too wide at the apex
- Canal obstruction





上通下達 !!

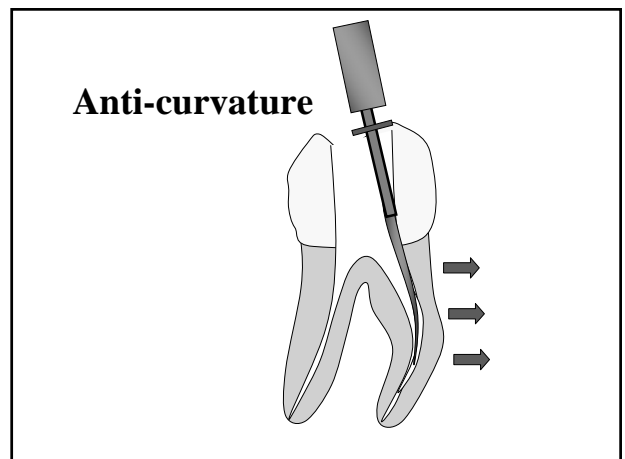




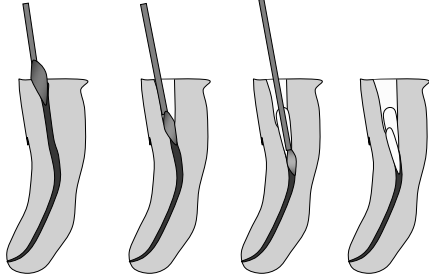
上通下達 !!

**Traditional Cleaning and Shaping Breakdowns**

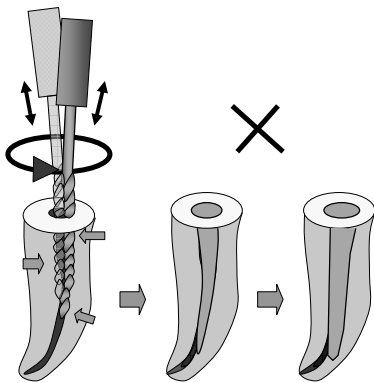
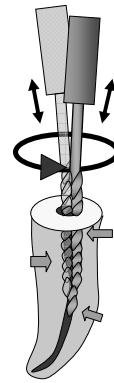
- Working Short
- Apical Preparation First
- Instruments and Methods of Use



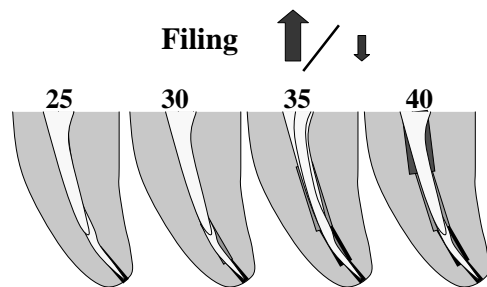
### Crown-down Technique



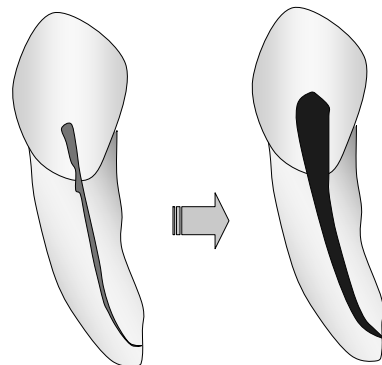
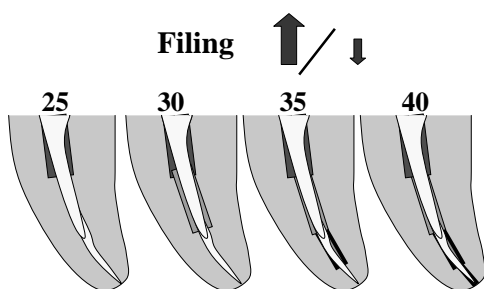
### Circumferential Filing



### Step Back Technique



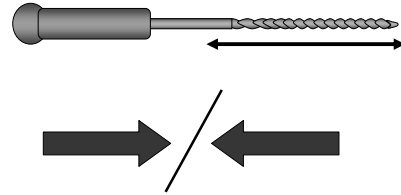
### Step Down Technique



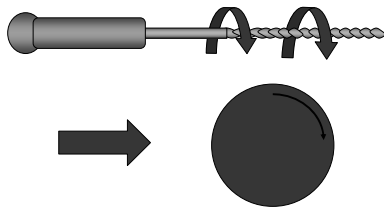
**Ledge! Transportation!  
Zipping! Block!**



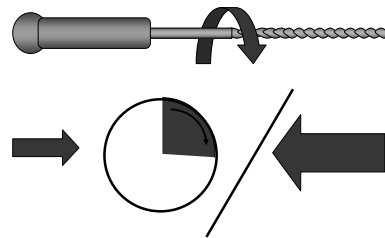
**Filing**



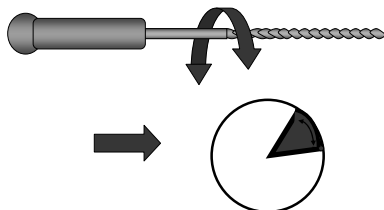
**Reaming**



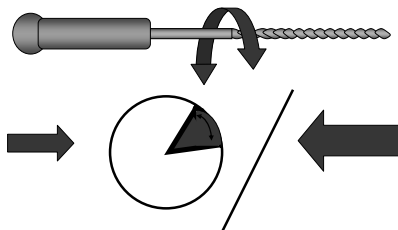
**Turn-and-Pull**



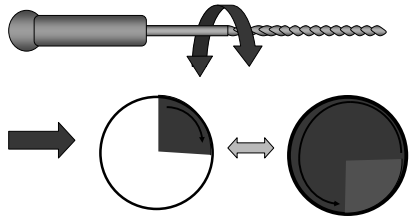
**Watch-winding**



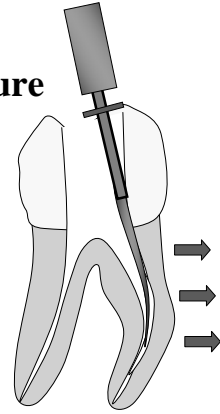
**Watch-winding and Pull**



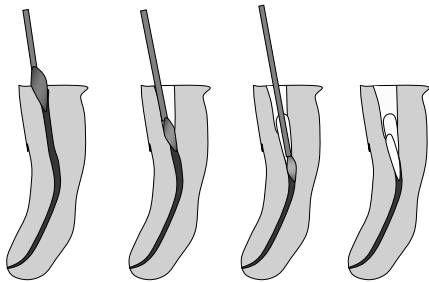
### Balanced Force



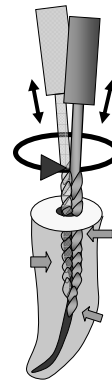
### Anti-curvature



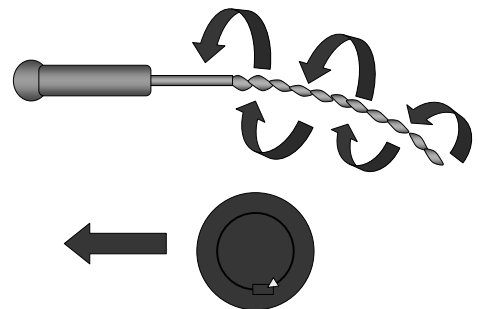
### Crown-down Technique



### Circumferential Filing



### Envelope of Motion



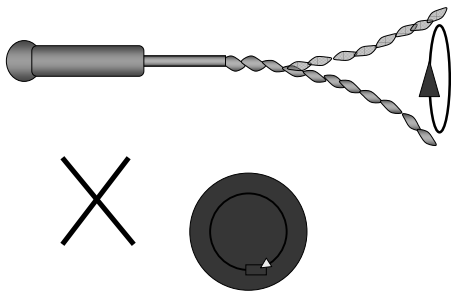
### **Coronal / Body Portion:**

- Reamers
- Envelope of motion

### **Envelope of Motion**

**A function of the shape of the original instrument modified by its curvature within the canal**

### **Envelope of Motion ???**

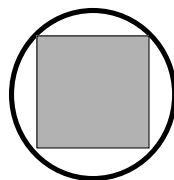


### **Envelope of Motion**

**From this it can be seen that reamers can be efficient planing instruments in straight canals and in relatively straight portion of curved canals.**

**Reamers  
are the best instruments for  
carving and sculpting**

**K-Type File**



**K-Type Reamer**

