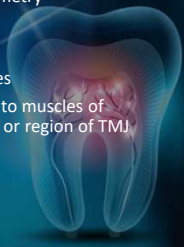




### Clinical Examination

- Extraoral
- Soft tissue
- Dentition
- Periodontal
- Clinical tests


- Facial asymmetry
- Swelling
- Sinus tracts
- Lymph nodes
- Tenderness to muscles of mastication or region of TMJ



### Clinical Examination

- Extraoral
- Soft tissue
- Dentition
- Periodontal
- Clinical tests

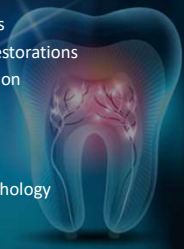
- Inflammation
- Ulceration
- Swelling
- Draining sinus



### Clinical Examination

- Extraoral
- Soft tissue
- Dentition
- Periodontal
- Clinical tests


- Caries
- Restorations
- Defective restorations
- Discolouration
- Cracks
- Abfraction
- Attrition
- Tooth morphology



### Clinical Examination

- Extraoral
- Soft tissue
- Dentition
- Periodontal
- Clinical tests

- Probing depths
  - Narrow or broad
- Open contacts and food packs

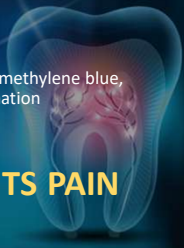


### Clinical Examination

- Extraoral
- Soft tissue
- Dentition
- Periodontal
- Clinical tests

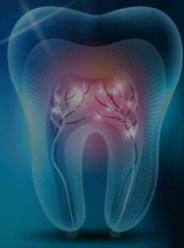
- Percussion
- Palpation
- Mobility
- FracFinder, methylene blue, transillumination
- Pulp testing

**REPRODUCE THE PATIENTS PAIN**



### Pulp Testing

- CO<sub>2</sub>
- Cold spray (TFE)
- Electric pulp testing (EPT)
- Isolation testing



### CO<sub>2</sub> and Cold Spray Pulp Tests

- CO<sub>2</sub> = -78°
- Cold spray (TFE) = -18° to -28°

89-90%

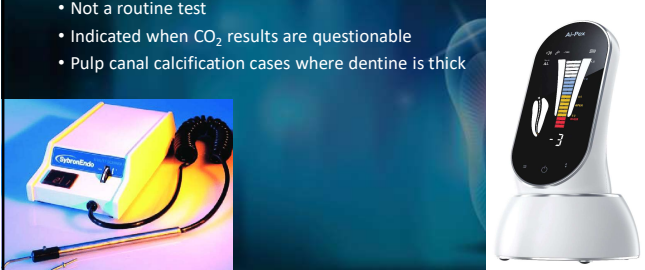
Gopikrishna *et al.* 2007

- Correct identification of pulp necrosis = 81%
- Correct identification of vital pulp = 92%



### Electric Pulp Testing

- Not a routine test
- Indicated when CO<sub>2</sub> results are questionable
- Pulp canal calcification cases where dentine is thick




### Isolation Testing



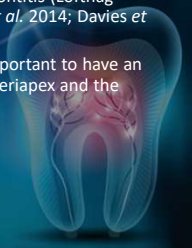
### Radiographic Examination

- Resorptive and bone remodelling activities in response to the inflammation are the main causes of changes that become visible on the radiograph
- Limitations in periapical radiographs is the superimposition of anatomical structures
- Interpretation of a periapical radiograph is subjective (Tewary *et al.* 2011)

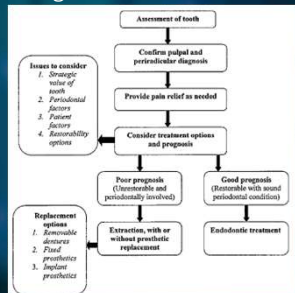


### Cone-beam Computed Tomography

- CBCT more accurate in identifying apical periodontitis (Lofthag-Hansen *et al.* 2007; Estrela *et al.* 2008; Abella *et al.* 2014; Davies *et al.* 2015)
- For CBCT to be used as a diagnostic tool, it is important to have an understanding of the appearance of a healthy periapex and the manifestations of apical periodontitis on CBCT



### Definitive Diagnosis and Treatment Planning



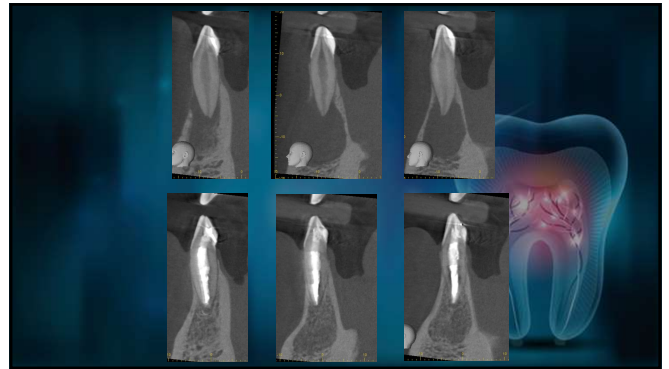
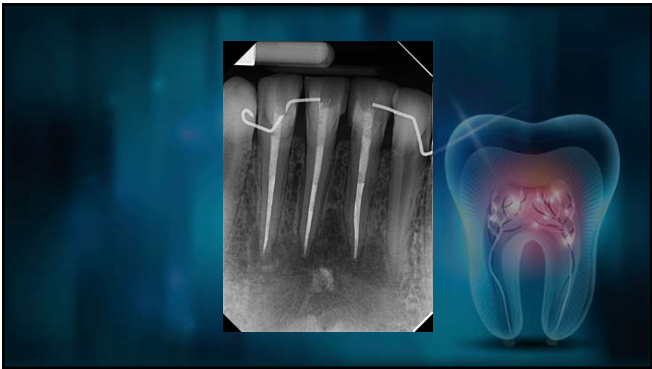
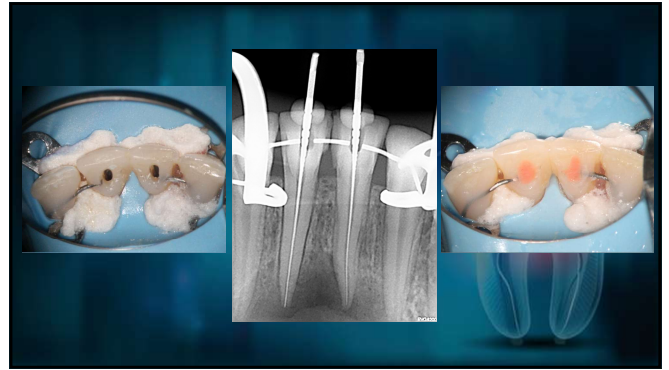
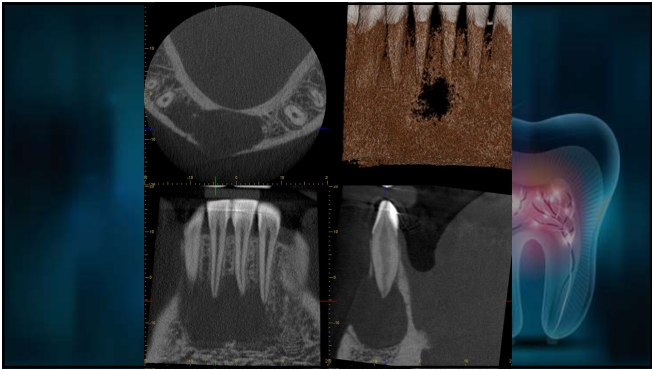


- Pain to hot and cold
- Percussion: 26 and 27 +ve
- CO<sub>2</sub> = 26 and 27 +ve
- Isolation testing
  - Heat = 26 +ve

- Hx of pain to heat
- Currently asymptomatic
- CO<sub>2</sub>:
  - 21 = +ve
  - 12, 11, 22 = -ve
- EPT:
  - 12, 21, 22 = +Ve
  - 11 = -ve

- Cold sensitivity
  - Does not linger
- CO<sub>2</sub>: 36/37 = +ve
- 37 restoration placed three months ago

- Swelling
- CO<sub>2</sub> = 31/41 -ve and 42 +ve



### Conclusion

- Listen to the patient's history
- Be thorough with diagnostic testing
- If unable to formulate a definitive diagnosis do not carry out irreversible treatment
- Ask for a second opinion

