

Endodontic Pain Guide

to Symptoms and Diagnosis



Guide to Endodontic Diagnosis

diagnosis noun

di-ag-no-sis | \di-ig-no-sas

Plural **diagnoses** \ di-ig-no-sez

Essential Meaning of *diagnosis*

1 : the act of identifying a disease, illness, or problem by examining someone or something

/The unusual combination of symptoms made accurate diagnosis difficult.

/She is an expert in the diagnosis and treatment of eye diseases.

2 : a statement or conclusion that describes the reason for a disease, illness, of problem

/The diagnosis was a mild concussion.

/His doctor made an initial diagnosis of pneumonia.

/The committee published its diagnosis of the problems affecting urban schools.

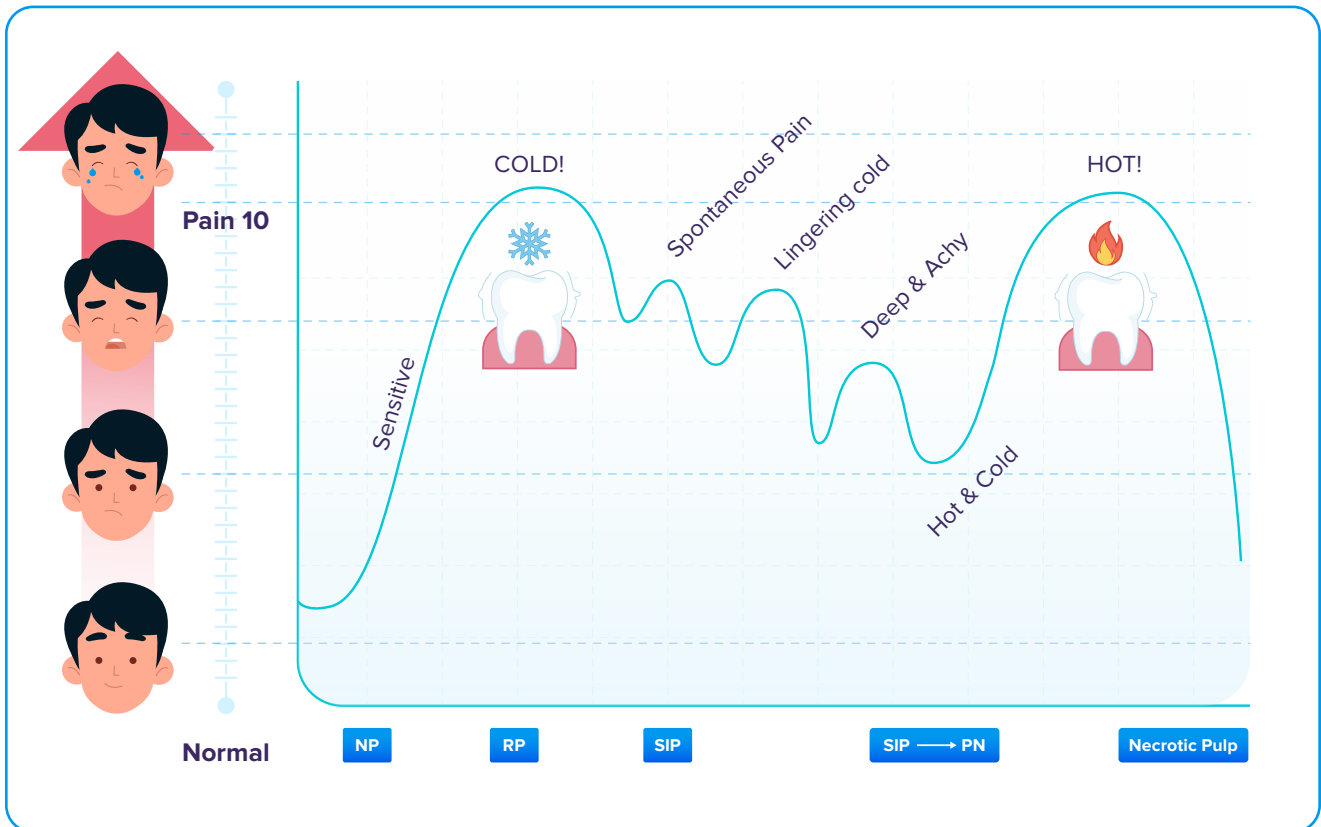


Examination procedures required to make an endodontic diagnosis

Medical/dental history	Past/recent treatment, drugs
Chief complaint(if any)	How long, symptoms, duration of pain, location, onset, stimuli, relief, referred, medications
Clinical exam	Facial symmetry, sinus tract, soft tissue, periodontal status (probing, mobility), caries, restorations (defective, newly placed?)
Clinical testing : pulp tests	Cold, electric pulp test, heat
periapical tests	Percussion, palpation, Tooth Slooth (biting)
Radiographic analysis	New periapicals (at least 2), bitewing, cone beam-computed tomography
Additional tests	Transillumination, selective anesthesia, test cavity



PULP DIAGNOSIS GUIDE



Pulp Diagnosis

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AIP

PN

PT

PI

NP

SIP

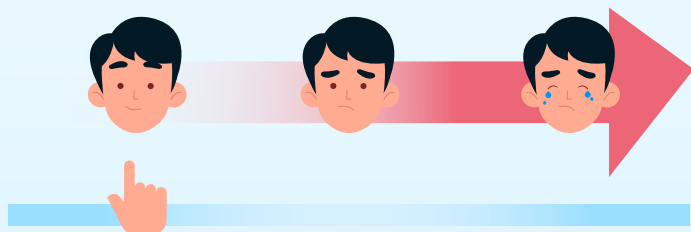


Pulp diagnosis

As defined by the American Association of Endodontists

Normal Pulp (NP)

Pain Scale



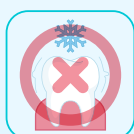
Normal Pulp (NP)

is a clinical diagnostic category in which the pulp is symptom-free and normally responsive to pulp testing. Although the pulp may not be histologically normal, a “clinically” normal pulp results in a mild or transient response to thermal cold testing, lasting no more than one to two seconds after the stimulus is removed. One cannot arrive at a probable diagnosis without comparing the tooth in question with adjacent and contralateral teeth. It is best to test the adjacent teeth and contralateral teeth first so that the patient is familiar with the experience of a normal response to cold.

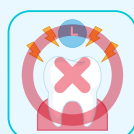
Common Symptoms



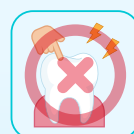
Pain To Hot



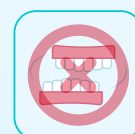
Pain Too Cold



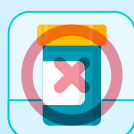
Random Zingers



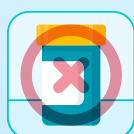
Pain To Touch



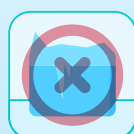
Pain When Chewing



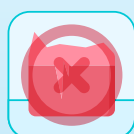
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

No treatment is needed on a tooth with a normal pulp diagnosis, unless needed for restorative purposes.

Considerations For Testing

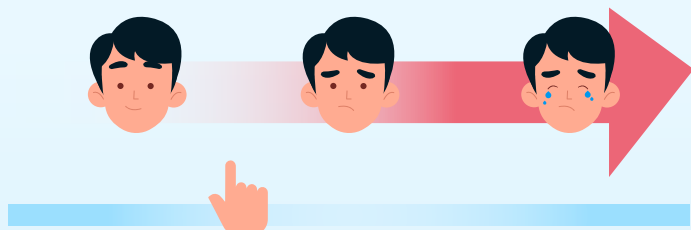
It is best to first establish what “normal” is for the patient. To do this, test the adjacent and/or contralateral teeth to get a baseline. Ask the patient to directly compare what the normal tooth feels like in comparison to the others.

Pulp diagnosis

As defined by the American Association of Endodontists

Reversible Pulpitis (RP)

Pain Scale



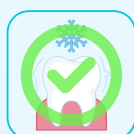
Reversible Pulpitis (RP)

is based upon subjective and objective findings indicating that the inflammation should resolve and the pulp return to normal following appropriate management of the etiology. Discomfort is experienced when a stimulus such as cold or sweet is applied and goes away within a couple of seconds following the removal of the stimulus. Typical etiologies may include exposed dentin (dental sensitivity), caries or deep restorations. There are no significant radiographic changes in the periapical region of the suspect tooth and the pain experienced is not spontaneous. Following the management of the etiology (e.g. caries removal plus restoration; covering the exposed dentin), the tooth requires further evaluation to determine whether the “reversible pulpitis” has returned to a normal status. Although dental sensitivity per se is not an inflammatory process, all of the symptoms of this entity mimic those of a reversible pulpitis.

Common Symptoms



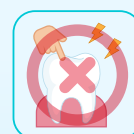
Pain To Hot



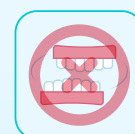
Pain Too Cold



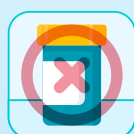
Random Zingers



Pain To Touch



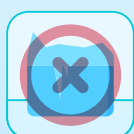
Pain When Chewing



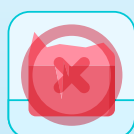
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

Perform conservative treatment first (caries removal, indirect pulp caps, etc.) and then re-evaluate at a future date to evaluate if the pulp has remained healthy.

Considerations For Testing

Pain felt is not spontaneous. (doesn't wake them up at night, etc)

Discomfort is experienced when a stimulus such as cold or sweet is applied and goes away within a couple of seconds following the removal of the stimulus.

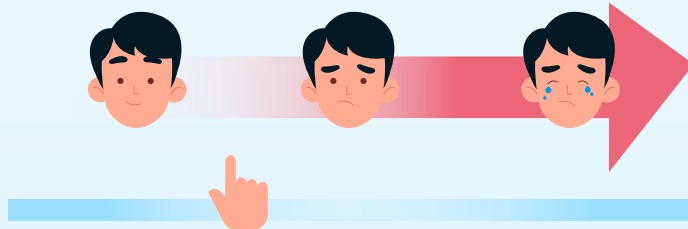
Re-evaluate even after a period of being symptom free to be sure it has “reversed” back to normal.

Pulp diagnosis

As defined by the American Association of Endodontists

Asymptomatic Irreversible Pulpitis (AIP)

Pain Scale



Asymptomatic Irreversible Pulpitis (AIP)

is a clinical diagnosis based on subjective and objective findings indicating that the vital inflamed pulp is incapable of healing and that root canal treatment is indicated. These cases have no clinical symptoms and usually respond normally to thermal testing but may have had trauma or deep caries that would likely result in exposure following removal.

Common Symptoms



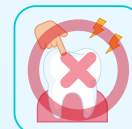
Pain To Hot



Pain Too Cold



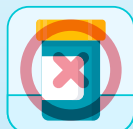
Random Zingers



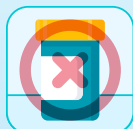
Pain To Touch



Pain When Chewing



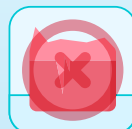
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

A common scenario: If your asymptomatic patient has deep caries and removing the caries would likely result in exposure, this might be AIP.

Considerations For Testing

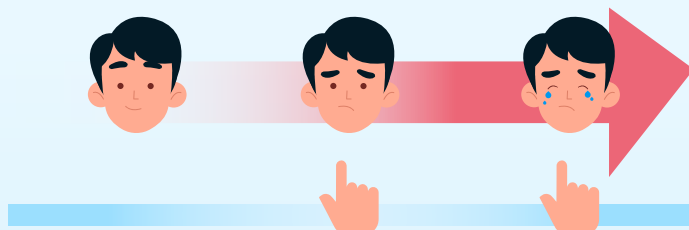
These teeth normally present similarly to Normal Pulp. The patient is sometimes completely unaware. Usually a tooth is considered AIP when its deemed unable to heal on its own even though there are no clinical symptoms (pain).

Pulp diagnosis

As defined by the American Association of Endodontists

Symptomatic Irreversible Pulpitis (SIP)

Pain Scale



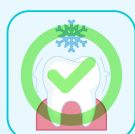
Symptomatic Irreversible Pulpitis (SIP)

is based on subjective and objective findings that the vital inflamed pulp is incapable of healing and that root canal treatment is indicated. Characteristics may include sharp pain upon thermal stimulus, lingering pain (often 30 seconds or longer after stimulus removal), spontaneity (unprovoked pain) and referred pain. Sometimes the pain may be accentuated by postural changes such as lying down or bending over and over-the-counter analgesics are typically ineffective. Common etiologies may include deep caries, extensive restorations, or fractures exposing the pulpal tissues. Teeth with symptomatic irreversible pulpitis may be difficult to diagnose because the inflammation has not yet reached the periapical tissues, thus resulting in no pain or discomfort to percussion. In such cases, dental history and thermal testing are the primary tools for assessing pulpal status.

Common Symptoms



Pain To Hot



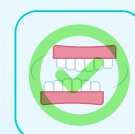
Pain Too Cold



Random Zingers



Pain To Touch



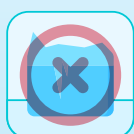
Pain When Chewing



OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

These teeth may be difficult to numb.. Make sure to have extra anesthetic around and be sure to offer alternative methods of delivery such as PDL intraligamentary or intraosseous injections.

Considerations For Testing

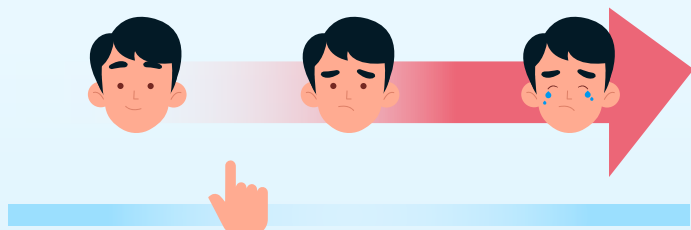
No need to leave a large cotton pellet soaked with Endo ice hanging on a tooth that is hurting. Light, intermittent touches can still get you the answer you need with minimal discomfort to the patient.

Pulp diagnosis

As defined by the American Association of Endodontists

Pulp Necrosis (PN)

Pain Scale



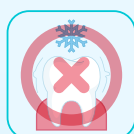
Pulp Necrosis (PN)

is a clinical diagnostic category indicating death of the dental pulp, necessitating root canal treatment. The pulp is non-responsive to pulp testing and is asymptomatic. Pulp necrosis by itself does not cause apical periodontitis (pain to percussion or radiographic evidence of osseous breakdown) unless the canal is infected. Some teeth may be nonresponsive to pulp testing because of calcification, recent history of trauma, or simply the tooth is just not responding. As stated previously, this is why all testing must be of a comparative nature (e.g. patient may not respond to thermal testing on any teeth).

Common Symptoms



Pain To Hot



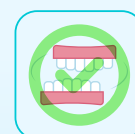
Pain Too Cold



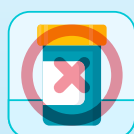
Random Zingers



Pain To Touch



Pain When Chewing



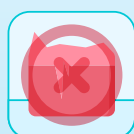
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
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Treatment Considerations

Consider using passive or ultrasonic irrigation methods for treating a Necrotic tooth.

You can also do this in two visits rather than one (one w/ Calcium Hydroxide).

Considerations For Testing

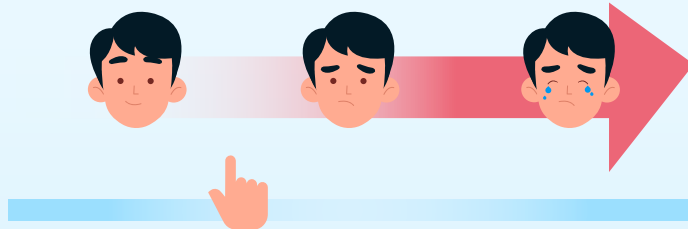
If several teeth are not responding to cold, there could be other reasons to consider. Be sure to verify this diagnosis using multiple methods and comparing with adjacent and contralateral teeth before deeming a tooth to be Necrotic.

Pulp diagnosis

As defined by the American Association of Endodontists

Previously Initiated Therapy (PIT)

Pain Scale



Previously Initiated Therapy (PIT)

is a clinical diagnostic category indicating that the tooth has been previously treated by partial endodontic therapy such as pulpotomy or pulpectomy. Depending on the level of therapy, the tooth may or may not respond to pulp testing modalities.

Common Symptoms



Pain To Hot



Pain Too Cold



Random Zingers



Pain To Touch



Pain When Chewing



OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

If a patient is feeling pain after initiating treatment, the nerve tissue was provoked and not removed well enough.

When doing a pulpotomy - remove the coronal layer of pulp but do not enter the canals.

Considerations For Testing

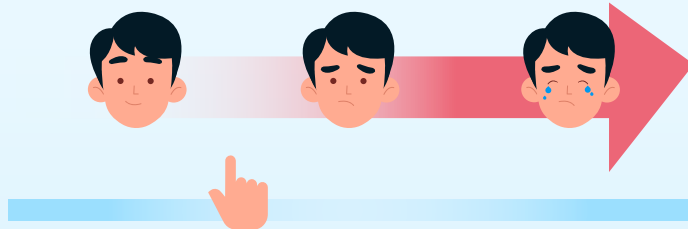
Taking a CBCT will help you view the tooth from any angle you need. This can allow you to discover untreated canals, fractures, perforations, etc.

Pulp diagnosis

As defined by the American Association of Endodontists

Previously Treated (PT)

Pain Scale



Previously Treated (PT)

is a clinical diagnostic category indicating that the tooth has been endodontically treated and the canals are obturated with various filling materials other than intracanal medicaments. The tooth typically does not respond to thermal or electric pulp testing.

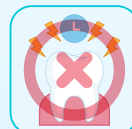
Common Symptoms



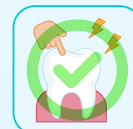
Pain To Hot



Pain Too Cold



Random Zingers



Pain To Touch



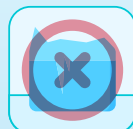
Pain When Chewing



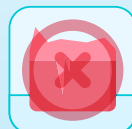
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

A previously treated tooth that is still having symptoms usually means:

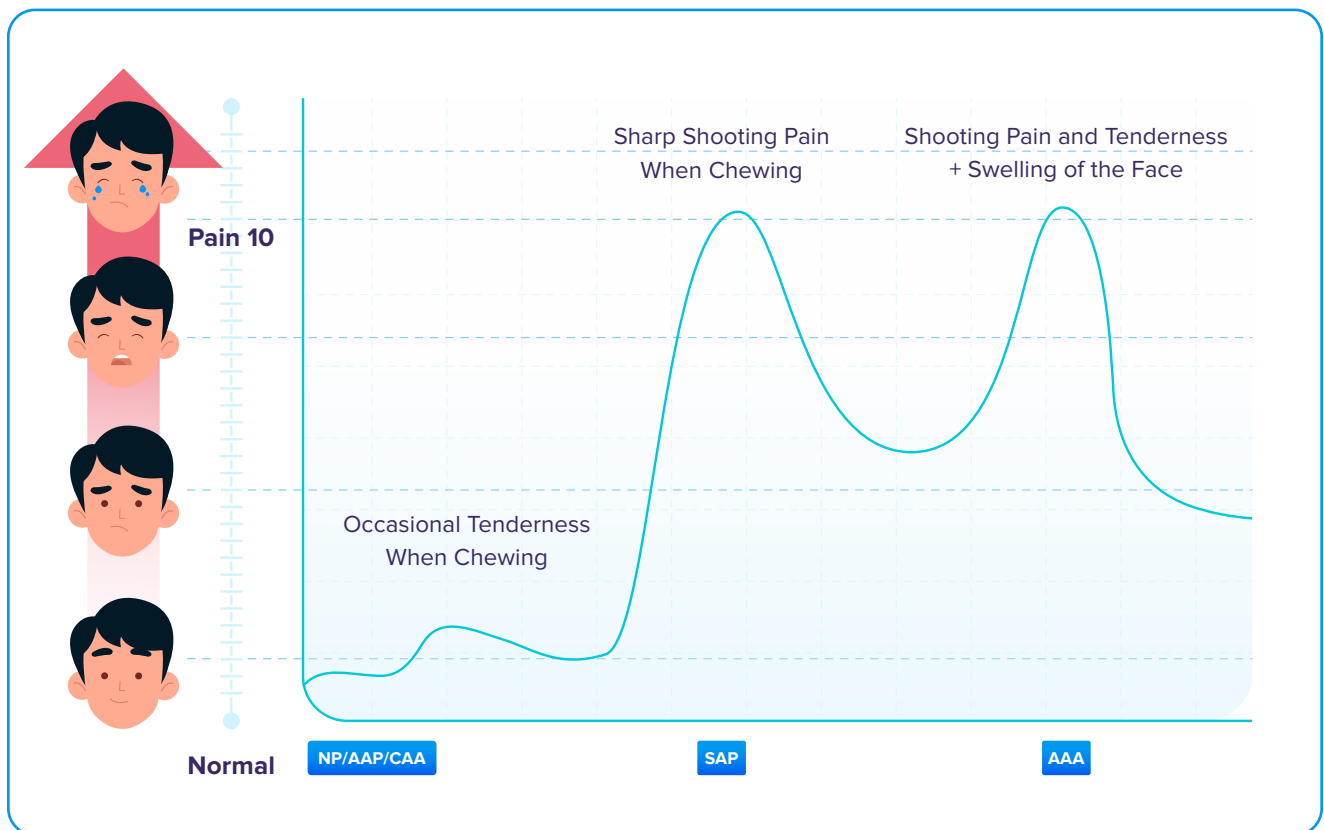
- There is pulp tissue remaining inside the tooth
- There is damage to the root or periapical structure (iatrogenic or natural)

Considerations For Testing

Previously treated teeth do not typically respond to pulp testing techniques. However, if you see missing canals in the X-ray and the treatment was recent, there may be pulp tissue remaining.



PERIAPICAL DIAGNOSIS GUIDE



Periapical Diagnosis

Page

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2. Symptomatic Apical Periodontitis (SAP) 12
3. Asymptomatic Apical Periodontitis (AAP) 13
4. Acute Apical Abscess (AAA) 14
5. Chronic Apical Abscess (CAA) 15

NAT

AAP

CAA

SAP

AAA

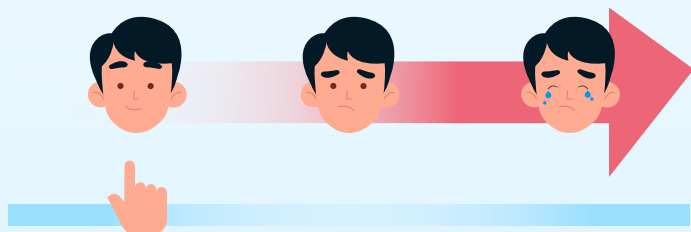


Periapical diagnosis

As defined by the American Association of Endodontists

Normal Apical Tissues (NAT)

Pain Scale



Normal Apical Tissues (NAT)

are not sensitive to percussion or palpation testing and radiographically, the lamina dura surrounding the root is intact and the periodontal ligament space is uniform. As with pulp testing, comparative testing for percussion and palpation should always begin with normal teeth as a baseline for the patient.

Common Symptoms



Pain To Hot



Pain Too Cold



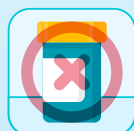
Random Zingers



Pain To Touch



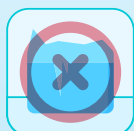
Pain When Chewing



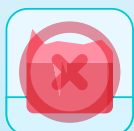
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

Sometimes, a previously treated tooth that doesn't look "ideal" on the xray can still have normal apical tissues for years. If there are no symptoms of pain and no periapical lesions are seen on the xray, it's usually best to leave alone and treat only when symptoms arise. Place tooth on a periodic watch schedule instead.

Considerations For Testing

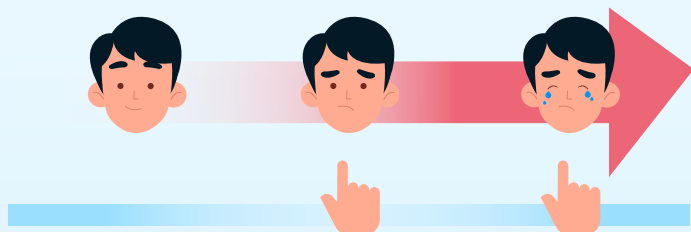
It is best to first establish what is "normal" for the patient. To do this, test the adjacent and contralateral teeth first so the patient can directly feel what a normal response should feel like to them.

Periapical diagnosis

As defined by the American Association of Endodontists

Symptomatic Apical Periodontitis (SAP)

Pain Scale



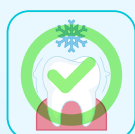
Symptomatic Apical Periodontitis (SAP)

represents inflammation, usually of the apical periodontium, producing clinical symptoms involving a painful response to biting and/or percussion or palpation. This may or may not be accompanied by radiographic changes (i.e. depending upon the stage of the disease, there may be normal width of the periodontal ligament or there may be a periapical radiolucency). Severe pain to percussion and/or palpation is highly indicative of a degenerating pulp and root canal treatment is needed.

Common Symptoms



Pain To Hot



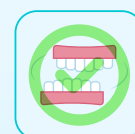
Pain Too Cold



Random Zingers



Pain To Touch



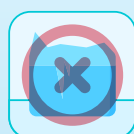
Pain When Chewing



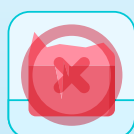
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
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Treatment Considerations

There will often be inflammation towards the apex when doing a root canal here. Sometimes, a gentle PDL injection before starting can avoid sudden zingers during treatment.

Considerations For Testing

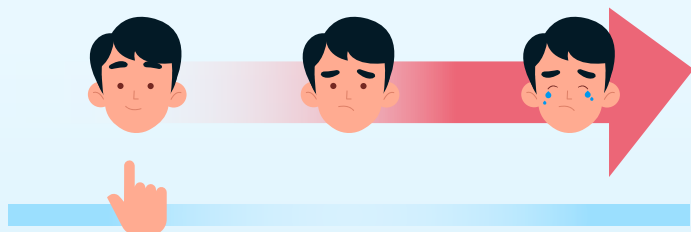
If a patient complains of tenderness to touch, I don't tap on that tooth without first gently pressing into it with the instrument. If there is tenderness with just the pressing, there is no need to percuss.

Periapical diagnosis

As defined by the American Association of Endodontists

Asymptomatic Apical Periodontitis (AAP)

Pain Scale



Asymptomatic Apical Periodontitis (AAP)

is inflammation and destruction of the apical periodontium that is of pulpal origin. It appears as an apical radiolucency and does not present clinical symptoms (no pain on percussion or palpation).

Common Symptoms



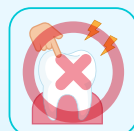
Pain To Hot



Pain Too Cold



Random Zingers



Pain To Touch



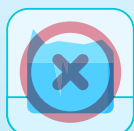
Pain When Chewing



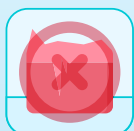
OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

In some teeth with AAP that has consistently been asymptomatic for many years and the size and density of the PARL appear to be the same, a tooth with AAP can simply be monitored. Treat if/when symptoms arise.

Considerations For Testing

These will feel exactly like their adjacent teeth during testing. Mostly, the way to identify AAP is with a periapical x-ray of the tooth.

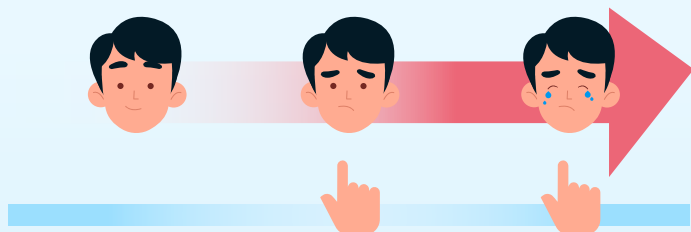
Periapical radiolucencies are not always associated with pain and not all asymptomatic periapical radiolucency is odontogenic. Structures such as the mental foramen are often confused as a PARL.

Periapical diagnosis

As defined by the American Association of Endodontists

Acute Apical Abscess (AAA)

Pain Scale



Acute Apical Abscess (AAA)

is an inflammatory reaction to pulpal infection and necrosis characterized by rapid onset, spontaneous pain, extreme tenderness of the tooth to pressure, pus formation and swelling of associated tissues. There may be no radiographic signs of destruction and the patient often experiences malaise, fever and lymphadenopathy.

Common Symptoms



Pain To Hot



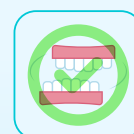
Pain Too Cold



Random Zingers



Pain To Touch



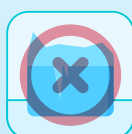
Pain When Chewing



OTC Pain Meds



Antibiotics



Something Cold



Something Warm



Natural Remedies



**What Helps
Before They
See You**

Treatment Considerations

This is typically the “hottest” of hot teeth so approach with care. Depending on the severity of infection, the patient may also need an I&D. If the infection requires an extraoral I&D, you may want to refer to your local oral surgeon.

Considerations For Testing

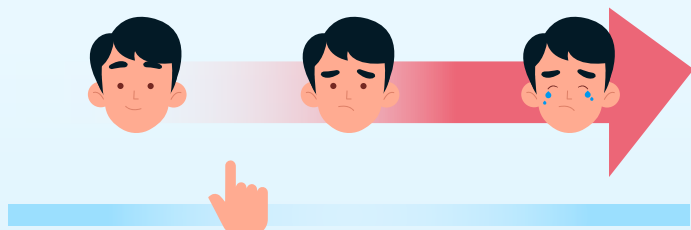
The gingiva and other tissues in the area will likely be extremely tender. When palpating, use less pressure than you normally do.

Periapical diagnosis

As defined by the American Association of Endodontists

Chronic Apical Abscess (CAA)

Pain Scale



Chronic Apical Abscess (CAA)

is an inflammatory reaction to pulpal infection and necrosis characterized by gradual onset, little or no discomfort and an intermittent discharge of pus through an associated sinus tract. Radiographically, there are typically signs of osseous destruction such as a radiolucency. To identify the source of a draining sinus tract when present, a gutta percha cone is carefully placed through the stoma or opening until it stops and a radiograph is taken.

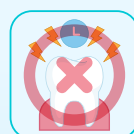
Common Symptoms



Pain To Hot



Pain Too Cold



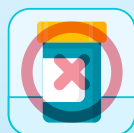
Random Zingers



Pain To Touch



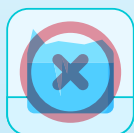
Pain When Chewing



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Treatment Considerations

If you notice that pus is actively draining during the procedure, it's not a bad idea to complete a full debridement, place Calcium Hydroxide and finish the root canal in about 2 weeks instead. This way, the tooth has a better chance of healing without having a persistent infection.

Considerations For Testing

Anytime you see a sinus tract, it is automatically: CAA.

Patients might mention the occasional "pimple" in their mouth that pops and disappears for a few months before coming back, but there is usually no pain.

With CAA, I'll often hear patients say "it feels a little different. Doesn't hurt, just feels hollow or something".

Thank you

For more information on exactly how to do diagnostic testing in an accurate yet gentle way, sign up for my course on how to do root canals that are fast, effective and gentle to the patient, your team, and yourself. This course will teach Endodontics in a way you might not have had exposure to in the past and for many, will be a completely fresh way of approaching Endodontics. Go to <https://roottherapy.learnrootcanals.com> for more info.

Also for quick access to this guide on Diagnosis, place this QR code in your office and scan it with your phone or tablet to get the information you need easily.

Space for
QR Code

**Pulpal
Diagnosis**

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QR Code

**Periapical
Diagnosis**

References

1. Definition of "diagnosis." Merriam-Webster.com. Merriam-Webster, 2021. Web. 31 Dec 2021.
2. <https://www.aae.org/specialty/wp-content/uploads/sites/2/2017/07/endodonticdiagnosisfall2013.pdf>

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