

A Fundamental Approach to Periodontal Assessment Instrumentation



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Chapter 1

The Dental Mirror

Providing valuable insight!



SECTION 1

Introduction

OBJECTIVES:

AT THE COMPLETION OF THIS UNIT,
STUDENTS WILL BE ABLE TO:

1. State four functions of the dental mirror.
2. Identify the various parts of the dental mirror
3. Identify and describe the three types of mirror heads
4. Describe how the dental mirror's head to shank angle affects operator's positioning.
5. Site examples of how to ensure a clear image on the face of the dental mirror.



The dental mirror is one of three assessment instruments used to perform preliminary, noninvasive evaluation of the oral cavity. Since the mirror does not penetrate (or invade) tissue, it is the first instrument used to inspect the hard and soft tissue prior to implementation of any dental procedures.

Note: It should be noted that any medical and extra oral anomalies be cleared prior to moving intra orally.

The dental mirror allows the clinician to inspect the oral cavity thoroughly and determine its general health. Initially, the clinician uses the mirror to ensure the safety of both the clinician and the patient. By confirming, or denying, the presence of contagious lesions or conditions the patient may have that require immediate action or a change in procedure, the clinician can then move forward in examining other structures of interest. Examples of this might include but not limited to: an abscessed tooth, a cancerous lesion.

The mirror can be used alone as an inspection instrument or as an adjunct instrument to aid vision when other dental instruments are being used.

Functions Of The Dental Mirror:

The functions of the dental mirror:

1. Retraction
2. Indirect Vision
3. Reflection
4. Transillumination

Retraction

Retraction is used to 'retract', or pull away from its original position. By retracting the cheeks, lips or tongue, the clinician is now able to see areas that were otherwise hidden and can make use of 'direct vision' for inspection. Using the mirror to retract tissue also allows the clinician to properly place additional instruments in a specific area without harming the surrounding tissue. For example, by retracting the buccal mucosa away from the buccal aspect of the posterior teeth, the clinician now has direct sight of the vestibule and buccal surfaces of the teeth and can inspect the tissue or place an additional instrument in the area without harming the buccal mucosa

Gallery 1.1. Retraction



Retracting the tongue for better viewing of the lingual surfaces of the posterior teeth.



Indirect Vision

Indirect vision allows the clinician to access and see into areas that can not be seen with direct vision. The site is viewed on the face of the mirror, similar to looking through your car mirror to view your blind spot or to see behind you. By angling the dental mirror for example, the clinician can indirectly view the distal aspect of the molars. By using the back side of the mirror to retract the buccal mucosa and angling the mirror face, the clinician can view the distal surface of the most posterior molars.

Reflection

Reflection is the transference of light, using the face of the dental mirror, onto an area of interest for better viewing. By reflecting the light, the clinician is 'illuminating', or lighting up an area to provide more clarity. As in the previous example, the mirror is used to retract the buccal mucosa and then, using the face of the mirror, project light onto the posterior teeth. Now the clinician can view the surfaces of the molars by using direct or indirect vision. '

Transillumination

Trans-illumination is reflecting light onto the lingual side of the maxillary or mandibular anterior teeth. The light penetrates through the tooth and highlights irregularities in the density of the tooth. Because these teeth are not as dense as the posterior teeth, the reflected light can penetrate the interior of the tooth and light it up. This is particularly useful when looking for decay, which shows up as dark shadowing within the teeth.

Gallery 1.2 Using Indirect Vision/Reflection and Transillumination



Viewing the maxillary right premolars lingual surfaces.



Design Characteristics

The design characteristics of the dental mirror provide the clinician with choices that can best suit their personal preferences. Knowing these characteristics exist can help create more comfortable operator positioning, aid in accessing an area of interest and creating a clearer vision within the oral cavity.

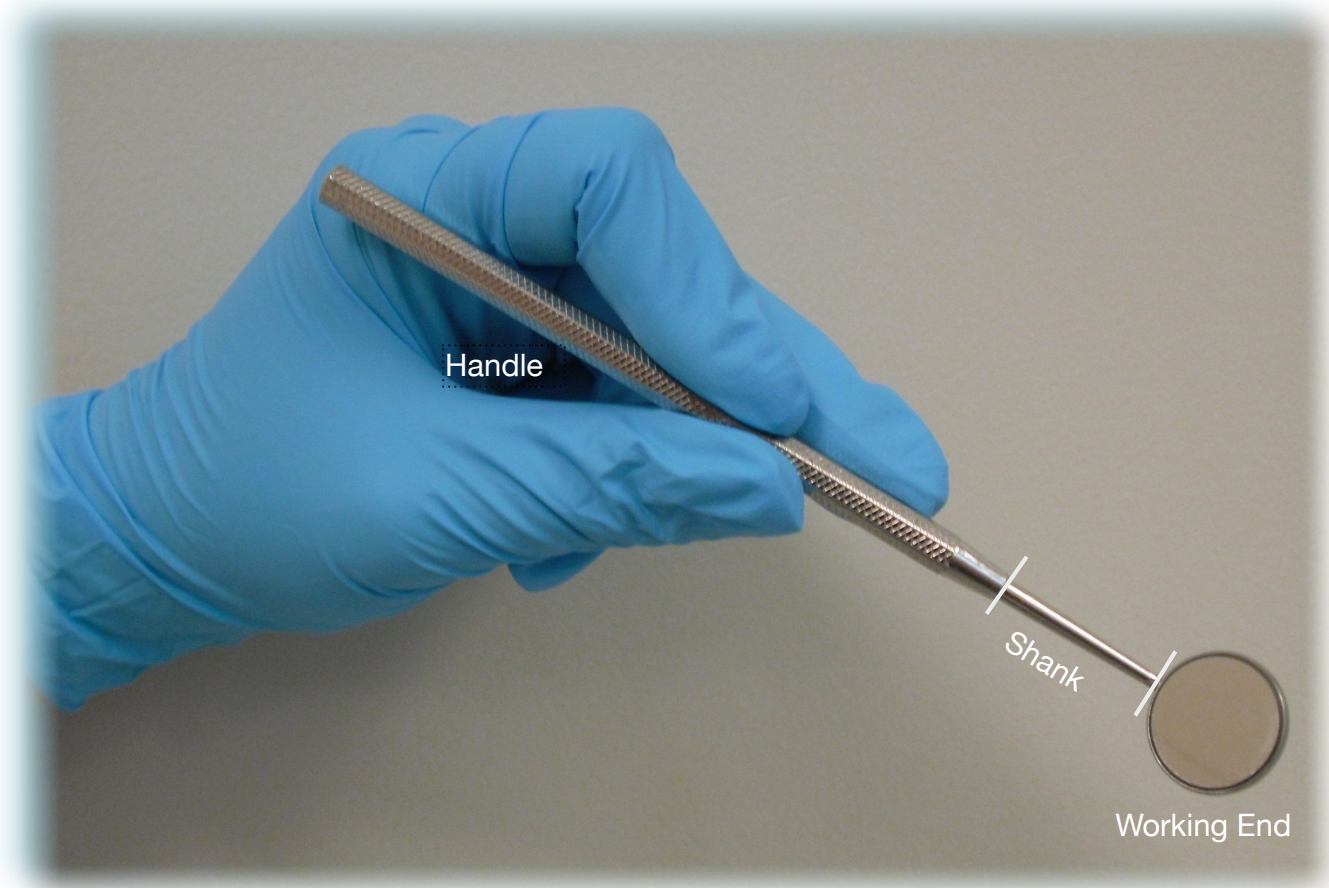
Parts of the Mirror

Handle

Shank

Working end

Face



Types of Dental Mirrors

Front surface mirrors are the most commonly used type of mirrors because its image is clear with no distortions. Unfortunately this type of mirror can scratch easily

Concave surface mirrors magnify the image however it causes distortions in the image. Due to the resulting distortion, this type of mirror is not recommended for dental use.

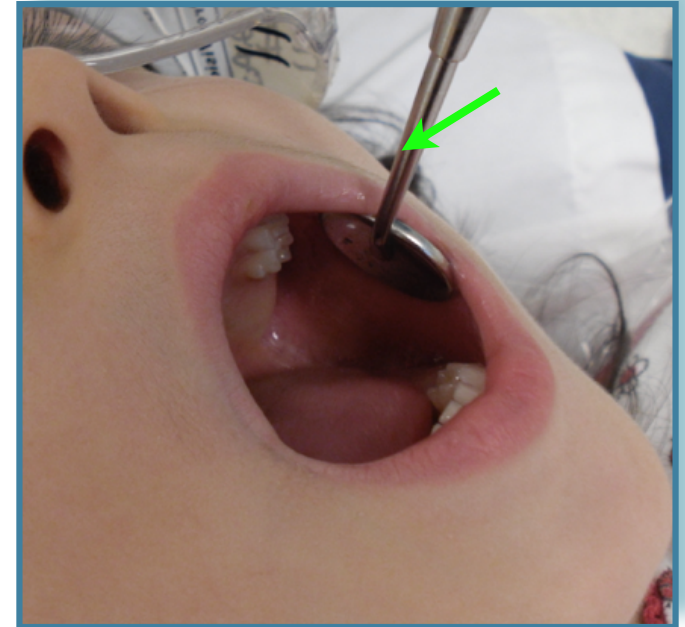
Plane (flat) surface mirrors produce a double, or ghost, image which can be distracting to the clinician and result in misinterpretation of the image.

Sizes

The diameter of the dental mirror head can vary from 5/8 to 2 inches. Smaller heads are often used in pediatric offices where accessing a very small oral cavity can be challenging. Mirrors ranging in diameter from 1 1/2 to 2 inch are used for examination purposes only.

Angle of Shank to Mirror Head

The angle created at the junction of the mirror head and the shank can also vary. A more acute angle (about 3° sharper) is often used by the clinician who primarily sits behind the patient's head for all treatment procedures. When the clinician positions themselves in this range, it is known as Performance Logic Position.



Two Surface Mirrors

Two surface mirrors are mirrors that have a mirror on its face and on its back. These types of mirrors are able to provide a visual of two areas simply by angling the head of the mirror one way or another without changing the actual location of the mirror in the mouth. For example, the clinician can view the posterior lateral boarder of the tongue using the face of the mirror and then by retracting the tongue (without pulling the mirror out of the mouth and readjusting), the clinician can now view the floor of the mouth and lingual mucosa of the posterior molars.

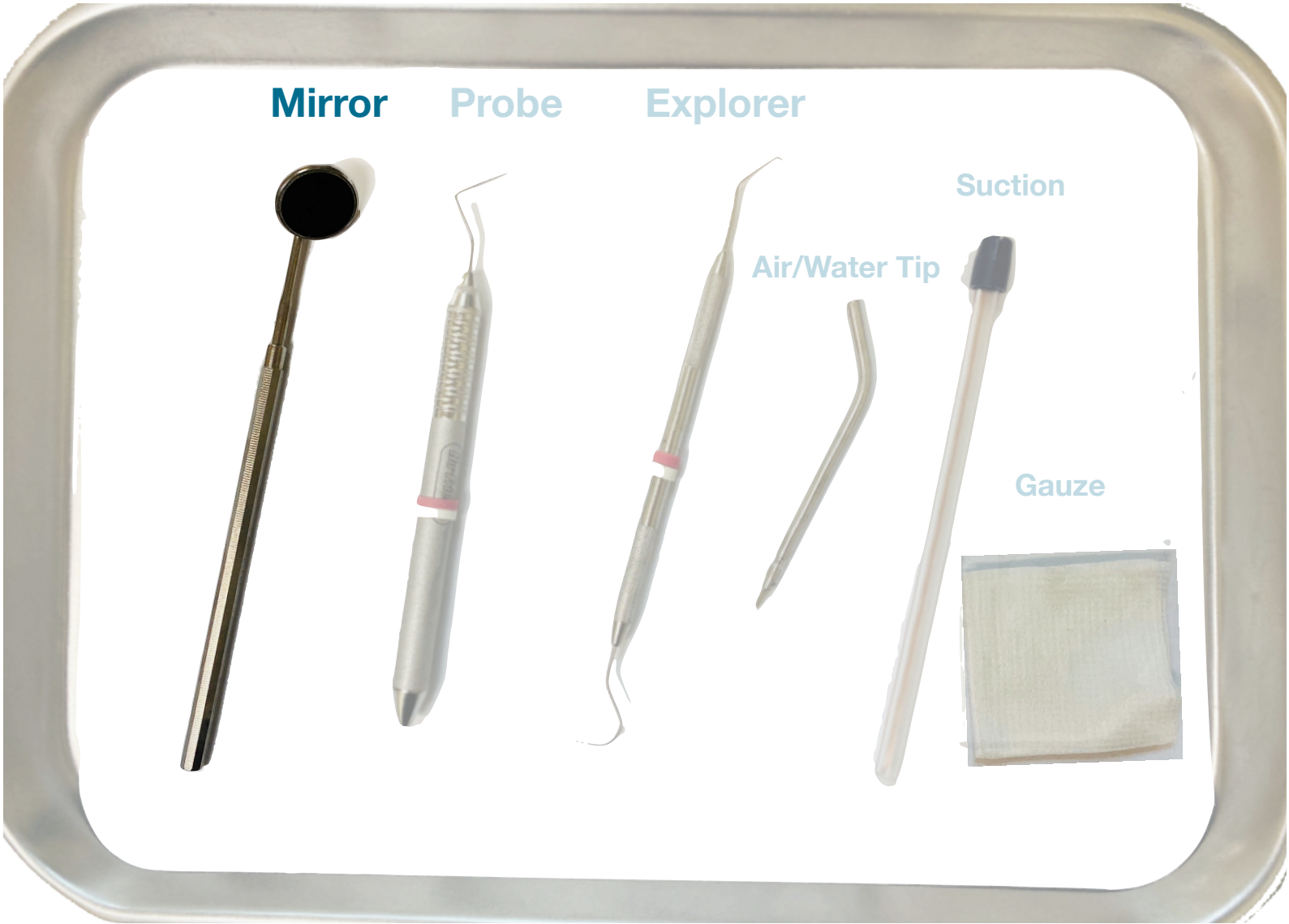
Tips To Ensure A Clear Image

To minimize fog on the dental mirror:

- Use air directly on mirror face
- Use water to coat surface of mirror
- Coat mirror face with patient saliva
- Detergents are also available for this purpose as well.
- Use saliva ejector to minimize pooling saliva that may cover, or partially cover, mirror face.
- Use suction, gauze and air to keep area of interest clear for viewing.



Basic Armamentarium For Dental Screening:



SECTION 2

Basic Technique

OBJECTIVES:

AT THE COMPLETION OF THIS UNIT,
STUDENTS WILL BE ABLE TO:

1. Site differences between the Modified Pen Grasp and Pen Grasp.
2. Describe the two types of fulcrums used with the dental mirror.
3. Describe positioning of the dental light when using the mirror
4. Site examples of how to ensure a clear image on the face of the dental mirror
5. Site two things the clinician can do to ensure clarity in an area of interest.



The various functions of the dental mirror allow the clinician to inspect the oral cavity thoroughly and determine its general health. Initially, the clinician uses the mirror to perform an intra oral examination to ensure the safety of both the clinician and the patient. By confirming, or denying, the presence of contagious lesions or conditions the patient may have that require immediate action or a change in procedure, the clinician can then move forward in examining other structures of interest.