Full Mouth Series

A full mouth series of intraoral radiographs is defined as the radiographs necessary to examine the dentition and supporting structures. It is usually comprised of approximately 14 periapical and 4 bitewing projections.

Local conditions will dictate variations. These include:
- Fewer teeth
- Smaller arches
- Missing contacts
- Regardless of the number of films exposed, one should be able to visualize the entire dentition and supporting structures.
The Full Mouth Series

- A full mouth series might also include a panoramic radiograph in combination with bitewing projections and/or periapical views.

Assessment is a 2-Step Process

- Step 1: Evaluate the films for the need for retakes
- Step 2: Critique the individual films for:
  a. Deviation from the ideal
  b. Reasons for the deviation

Assessment of Diagnostic Acceptability

- Does the entire set of radiographs, viewed as a single examination, accomplish the goals of the examination?
- Are all apices, crowns, and contacts clearly visible at least once?
- Can the supporting structures be viewed adequately?

“...you can’t always get what you want, but if you try sometimes, you just might find, you get what you need.”

Mick Jagger

Criteria for Retakes

- Is the anatomic structure visible on any other view in the series?
- Although less than perfect, is the diagnostic information present in the image?
- Is the information available in a less invasive manner, for example, by clinical examination or vitality test?

Criteria for Retakes

- Can the borders of a lesion and a rim of unaffected surrounding tissue be seen on another view?
- Which view, e.g.: periapical, bitewing, occlusal, or panoramic will accomplish the goal with the lowest possible dose to the patient?
Criteria for Retakes

Based on the information available, will the retaken film influence diagnosis or treatment plan?

Non-Valid “Reasons” for Retakes

- Administrative films
- Improved grades
- Proof of completion of procedures
- Insurance company “rules” for pre- or post-operative films
- Duplicate films
- Structure or area of interest is adequately visible on another film in the examination
- A narrative report is adequate

Critiquing a Full Mouth Series

- Knowledge of criteria for each view
  - Area of coverage
  - Adequate coverage of periapical tissues – at least 2mm beyond the apex
  - Contact areas are seen clearly without overlap
  - Alignment of the occlusal plane with film edge
  - Proper contrast and density
  - Minimal geometric distortion
  - Proper processing

Technique Evaluation Form

Deviations from the Ideal

- **MA** Missing apices
- **PO** Proximal overlap
- **ANT** Anterior placement of premolar projection
- **MCan** Missing distal of canine on premolar projection
- **MT** Missing third molar region/or tuberosity on molar projection

- **Occl** Occlusal plane not aligned
- **MC** Missing Crowns
- **B** Blurred image
- **CC** Collimator cut
- **Contrast** Inappropriate contrast

- **Dot** Embossed dot near apices
- **TT** Tire track pattern
- **ANC** Anterior projection not correctly centered
- **Fore** Foreshortened

Deviations from the Ideal

- **Elong** Elongation
- **A** Artifact (processing)
- **O** Other error, please specify

**Density** Inappropriate density
Common Reasons

- **H** Horizontal angulation error
- **V** Vertical angulation error
- **P** Packet placement error
- **CNA** Collimator not aligned

- **Exp** Exposure error
- **Anatomy** Long roots/malposed teeth
- **Proc** Processing error
- **O** Other reason, please specify
- **BB** Bite block not on teeth

Missing Apices

Errors in Horizontal Angulation

![Diagram](image1)

Proximal Overlap

Collimator Cut

![Diagram](image2)

Missing Canine
Double Exposure

Missing Tuberosity

Errors in Vertical Angulation

Foreshortening

Elongation

Occlusal Plane Not Aligned
Errors in Vertical Angulation

Foreshortening or elongation?

Missing Crowns

Blurred Image

Contrast and Density

Dot
Tire Track

- “Tire track” pattern from reversed film

Vertical Angulation -- Foreshortening

Vertical Angulation Error

Bent Film Artifact

Artifact – Fingernail Marks

Processing Errors

- Washing
  - Incomplete washing will cause brown and yellow spots on films
- Automatic processing
  - Overlapping of films will cause brown lines on films
  - Low fluid levels will cause areas of incomplete processing
Processing Errors

- Radiographs are yellowed due to inadequate fixing and/or washing.

Processing Errors

- Fixer
  - Exhausted fixer causes brown spots on film
  - Too little time in fixer causes brown spots on film
  - Cold fixer causes brown spots on film

Processing Errors

- Light Leaks in the darkroom cause fogging of films
- Light can enter around the door or around ceiling tiles
- Safelights with high-wattage bulbs or improper filters can cause fogging
- Safelights that are too close to films cause fogging

Technique Evaluation Form

FMS 1