Clinical Practice Guideline

May 2025

Summary

Indication of intra-oral and panoramic X-ray examination in oral care

KENNIS INSTITUUT MONDZORG KIMO

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INTRODUCTION

Target group

The guideline is aimed at general oral care on an outpatient basis. The target group of this guideline is BIG-registered oral care providers who are allowed to indicate X-ray images. The target population of this guideline is all people who visit these oral care providers.

Glossary

Screening: process of systematically checking patients for oral health problems without there being any previous indications (e.g. complaints or previously recorded problems) for such oral health problems.
Diagnostics: process of identifying and diagnosing oral health problems and conditions in patients.
Treatment: Procedure or therapy performed to improve oral health , correct oral health problems, and restore dental aesthetics.
Follow-up: process of systematically monitoring changes, improvements or deteriorations, of the oral health situation of patients after an intervention. **Oral care providers:** dental care provider who, according to the BIG Act, is independently authorised to carry out the reserved act of applying ionising radiation. **Bitewing:** A type of dental X-ray used to image the crown and part of the root of the elements. Bitewing X-rays are mainly used to detect caries between the elements or under restaurations and to detect bone loss. Wherever 'bitewing' is mentioned in this guideline, a horizontal bitewing is meant, unless it is explicitly stated that it is a vertical bitewing.

General principles of X-ray examination

- X-ray examination is always complementary to clinical research and is justified if it potentially affects the (treatment) policy.
- Always assess the full picture.
- Do not reshoot if suitable shots are available.
- In case of referral: the referrer leaves the taking of X-ray(s) in the context of the referral to the oral care provider who accepts the referral.
- Exchange X-ray images (with patient's consent) between oral care providers, so that there is no need to retake recently taken images.
- Additional imaging may be indicated if the abnormality found on an intra-oral image cannot be fully visualized.
- For panoramic X-rays: always select the X-ray image that best matches the diagnostic question and only image the area for which there is justification.

INDICATIONS FOR X-RAY EXAMINATION

Caries

Screening

Intra-oral bitewings from 4-6 years, if approximal surfaces cannot be visually assessed:

- Once a year in case of increased caries risk, in exceptional cases once every six months,
- Once every 2 years in case of average caries risk,
- Once every 3 to 5 years with reduced caries risk.

Diagnostics

Consider intra-oral bitewing if (approximal) caries is suspected, or for assessment of extensive caries.

Diagnostics in children: see guideline Oral Care for Young People - Diagnostics. Diagnosis of root caries in the elderly: see guideline Root caries in the elderly.

Treatment

Use imaging created in screening or diagnostic stage.

Follow-up

For follow-up, see screening.

INDICATIONS FOR X-RAY EXAMINATION

Periodontology

Screening

NVvP guideline Periodontology in general practice is leading – no screening X-ray examination.

Diagnostics

Determine type of imaging study based on clinical features; Crestal bone levels should become visible on X-rays.

Horizontal bitewings for diagnosis of initial alveolar bone loss.

Vertical bitewings from moderate periodontal breakdown and incipient furcation lesions.

Peri-apical images for endodontically treated elements or suspicion of endo-/paro-endo problems and for periodontal classification.

Treatment

Use imaging created in diagnostic phase.

Follow-up

Intra-oral radiographological images in clinically established progression of periodontitis (e.g. increase in pocket depth and/or clinical loss of attachment >2 mm) and if the outcome of the image the treatment strategy potentially changes.

INDICATIONS FOR X-RAY EXAMINATION

Endodontics

Screening

No indication for imaging studies.

Diagnostics

Peri-apical admission in case of suspicion of endodontic problems in permanent dentition.

Peri-apical image for fistula racing in the presence of fistula.

Intra-oral bitewing in case of suspected endodontic problems in primary molars.

Peri-apical uptake in case of suspicion of endodontic problems in single-root milk elements.

Treatment

Use diagnostic recordings: peri-apical recording(s) for estimation of anatomy/root canals. Electronic length determination is preferred for root length determination (unless open apex or vital pulp).

Peri-apical image(s) with head/fountain pen(s) for control of additional channels and anatomy.

Peri-apical recording for assessment of final outcome.

In the case of milk elements: usually no indication for X-rays during treatment.

Follow-up

Peri-apical admission after one year, follow-up policy if lesion does not resolve. After that, no further radiological follow-up (unless trauma).

Milk dentition: follow up by periodic bitewings during caries screening.

INDICATIONS FOR X-RAY EXAMINATION

Implantology

Screening

No indication for imaging studies.

Diagnostics

Clinical examination and (dental) panorama image and/or peri-apical image.
With sufficient bone volume and distance to anatomical structures: no CBCT necessary.

Treatment

Intra-oral radiological image during surgery in case of insufficient certainty about the position of the implant in relation to surrounding structures.

Intra-oral radiographic recording immediately after surgery for assessment of the situation, unless clinically good to assess.

No X-ray examination in undisturbed wound healing.

Intra-oral recording for bone level assessment and control connection prosthetic components.

Follow-up

Intra-oral admission immediately or at least within half a year for control of bone level and connection of prosthetic components.

Intra-oral admission one year after placement of superstructure for determination of bone remodeling.

For diagnostics, prevention and treatment of peri-implant disorders: see guideline Peri-implant Inflammation.

INDICATIONS FOR X-RAY EXAMINATION

Restorations (direct and indirect)

Screening
No indication for imaging studies.

Diagnostics
Bitewing only if clinical research does not provide conclusive diagnostics.

Treatment
Only in the case of clinically invaluable suspicion of poor edge connection or residual cement/adhesive residues.

Follow-up
No indication for imaging studies.

Temporomandibular joint complaints

Screening
No indication for imaging studies.

Diagnostics
No indication for imaging studies.

Treatment
No indication for imaging studies in primary care. If insufficient treatment results: Consider referral to secondary care/differentiated practitioner for further diagnosis and treatment.

Follow-up
No indication for imaging studies.

INDICATIONS FOR X-RAY EXAMINATION

Pain complaints

Screening
No indication for imaging studies.

Diagnostics
Depending on the cause of the pain complaint, see the

relevant chapter. If non-dentogenic cause is suspected:

consider referral. For unknown cause: no imaging.

Treatment
No indication for imaging studies.

Follow-up
No indication for imaging studies

Orthodontics

See Orthodontic Radiology Guideline.

Third Molar

See Guideline Third Molar.

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