Radiation in dental practice

Reinhilde Jacobs
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Sarah Baatout
What can radiobiology bring to the dento-maxillofacial radiology? a radiation protection perspective

Ruben Pauwels
Optimization of dental cone-beam computed tomography exposures: a practical guide

Eva Levrn Jøghagen
Improved justification and optimization of dental 2D and 3D imaging through education and training

Keith Horner
Justification of X-ray examinations in dentistry
CBCT
3/4 virtual planning
1/4 diagnosis
ALADA IP: indication oriented & patient specific imaging
LETTER TO THE EDITOR

ALADAIP, beyond ALARA and towards personalized optimization for paediatric cone-beam CT

Anne Caroline Oenning, Reinhilde Jacobs, Benjamin Salmon, the DIMITRA Research Group (http://www.dimitra.be)

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Hormesis

Very low dose radiation
DMFR 50TH ANNIVERSARY: REVIEW ARTICLE

Cone beam computed tomography in dentomaxillofacial radiology: a two-decade overview

Hugo Gaêta-Araujo, Tamara Alzoubi, Karla de Faria Vasconcelos, Kaan Orhan, Ruben Pauwels, Jan W Casselman and Reinhilde Jacobs

280 CBCT models

CBCT ≠ CBCT
CBCT ≠ CBCT

Dentomaxillofacial paediatric imaging: an investigation towards low dose radiation induced risks
Planning Tooth Autotransplantation

1h to 1 m
Indication specific optimization

As Low Dose as Sufficient Quality: Optimization of Cone-beam Computed Tomographic Scanning Protocol for Tooth Autotransplantation Planning and Follow-up in Children

Mostafa EzElddeen, DDS, MSc,D,† Andreas Stratis, MSc,* Wim Coucke, PhD,‡ Martina Codari, MSc,* Constantinos Politis, MD, DDS, MHA, MM, PhD,* and Reinilde Jacobs, DDS, PhD, MSc, Dr hc*
<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Dose</th>
<th>Time of sampling</th>
<th>Tissue examined</th>
<th>Tissue used</th>
<th>Biological effects</th>
<th>References</th>
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</thead>
<tbody>
<tr>
<td>20 subjects ≤ 22.520 subjects &gt; 22.5</td>
<td>21.4 μSv</td>
<td>keratinized mucosa of the upper dental arch</td>
<td>Significant induction of MN</td>
<td>Cerqueira et al. (2008)</td>
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<tr>
<td>7.70 ± 1.50</td>
<td>0.08 Roentgen (Entrance dose)</td>
<td>Exfoliated oral mucosa cells</td>
<td>No induction of MN, and cytotoxicity (pyknosis, karyolysis). Significant induction of karyorrhexis.</td>
<td>Angelieri et al. (2007)</td>
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<tr>
<td>18–40</td>
<td>0.057 mSv (Average dose)</td>
<td>Cells of the lateral border of the tongue</td>
<td>No induction of MN, but increased cytotoxicity (pyknosis, karyolysis, karyorrhexis). The number of karyorrhexis and binucleated cells was greater after multiple X-rays</td>
<td>Da Silva et al. (2007)</td>
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<td>Exfoliated oral mucosa cells</td>
<td>No induction of MN, but increased cytotoxicity (pyknosis, karyolysis, karyorrhexis).</td>
<td>Popova et al. (2007)</td>
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</tbody>
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**DMFR 50th ANNIVERSARY: REVIEW ARTICLE**

**Radiobiological risks following dentomaxillofacial imaging: should we be concerned?**

1-2 Niels Belmans, 3-5 Anne Caroline Oenning, 4-5 Benjamin Salmon, 1-4 Bjorn Baselet, 4-6 Kevin Tabury, 7-8 Stéphane Lucas, 7-8 Ivo Lambrecht, 7-8 Marjan Moreels, 9-10 Reinhilde Jacobs and 11-12 Sarah Bautout