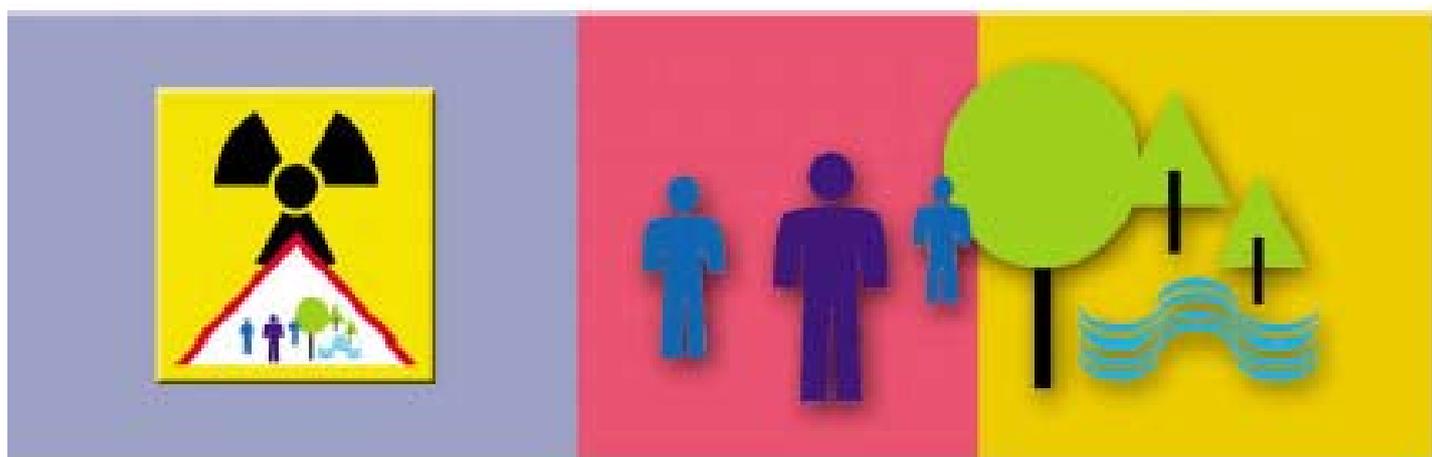


# RADIATION PROTECTION



European guidelines  
on radiation protection in dental radiology

The safe use of radiographs  
in dental practice

Issue N ° 136



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**European guidelines on radiation protection in dental radiology**

*The safe use of radiographs in dental practice*

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2004

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Acting Head of Unit



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1.1.

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	EURATOM
	laboratory study RCT
	
	
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1.3

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2.1

(EM)

“ ”

2.2

DNA

DNA

(19, 22)

(16, 22)

(15, 27)

(2)

“ ”

2.3

“ dose” “ exposure”

“ ”

“ ”

“ ”

mA kV  
(mGy)

(DRLs)  
 5 5.4 DRLs  
 ( 1 Sievert Sievert,  $\mu\text{Sv}$ )  
 (Joules / kg) Sievert

\*

detriment ICRP1990 3

2.4

$7.3 \times 10^{-2} \text{Sv}^{-1}$  2.1 ( (3) )

(26)

2.1

デトリメント ( $10^{-2} \text{ Sv}^{-1}$ )	
致死的癌	5.0
非致死的癌*	1.0
重篤な遺伝的影響	1.3
合計	7.3

\*

30

2.2 ((3) )

2.2

(3)

30

( )

年齢層(年)	リスク増倍率
<10	× 3
10-20	× 2
20-30	× 1.5
30-50	× 0.5
50-80	× 0.3
80+	無視出来る

80

2.3

2.2

(3)

2.3

White (26)  
1990

ICRP 60

E

White  
60

X線撮影技術	実効線量 ( $\mu\text{Sv}$ )	致死癌リスク ( $10^{-6}$ )	文献
口内法 (咬翼/根尖)	1 - 8.3	0.02 - 0.6	(5, 6, 9, 13, 21, 24, 26)
上顎前歯咬合	8	0.4	(9)
パノラマ	3.85 - 30	0.21 - 1.9	(7, 9, 11, 14, 17, 18, 21, 26)
側方頭部X線規格撮影	2-3	0.34 <sup>#</sup>	(12, 14, 20, 21, 25)
横断-断面断層撮影 (1スライス)	1 - 189	1-14	(8, 9, 11, 23)
CT (下顎)	364 -1202	18.2 - 88	(9, 10, 23)
CT (上顎)	100 - 3324	8 - 242	(9, 10, 23)

(5): E 19 1  
kV (90)  
(6): E 19 1  
kV (90)  
(26): White E 20 1

#

CT

EU

( 2.4)

## 2.4

## EU

(4).

EU 国名	年間X線撮影枚数 × 10 <sup>3</sup> (1撮影は1被曝)	人口 1,000 人あたりの 年間撮影枚数 *
デンマーク	2,400	449
ドイツ	22,520	274
スペイン	5,515	138
ルクセンブルグ	191	433
オランダ	2,700	169
ポルトガル	986	96
フィンランド	1,484	286
スウェーデン	15,000 **	1,660**
英国	12,500	209

\* 2001

\*\* Article 31 Group – error in original report (4)

## 2.5

2400 μSv (2) ( )

1 5

2

1

(20 μSv)

3

30 μSv

10 μSv (1)

CT

## 2.A

CT



## 2.B

(30 )

( EU )



## 2.6

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