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中华人民共和国国家职业卫生标准

GBZ 97 -XXXX

代替 GBZ 97-2017

职业性放射性肿瘤判断规范

Judgment standard for occupationalradiogenic neoplasms

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前 言

本标准第4章、第5章和附录G为强制性，其余均为推荐性内容。

本标准代替GBZ 97-2017《职业性放射性肿瘤判断规范》。与GBZ 97-2017相比，主要技术变化如下：

- a) 删除了规范性文件中标准GB/T17982，GB/T 18198 已经被GBZ/T 270所替代（见2）；
- b) 更改了附录B，表B-1，将“女性乳腺癌”改为“乳腺癌”（见表B-1）；
- c) 增加附录C.8男性乳腺癌超额危险系数（见附录C.8）；
- d) 更改表G.1，将“女性乳腺癌”改为“乳腺癌”（见表G.1）；
- e) 增加了附录H，放射致癌病因概率计算实例8（见附录H）
- f) 增加了参考文献

本标准由国家卫生健康标准委员会放射卫生标准专业委员会负责技术审查和技术咨询，由中国疾病预防控制中心负责协调性和格式审查，由国家卫生健康委员会职业健康司负责业务管理、法规司负责统筹管理。

本标准起草单位：中国疾病预防控制中心辐射防护与核安全医学所、中国医学科学院放射医学研究所、苏州大学、云南省疾病预防控制中心、江苏省疾病预防控制中心、吉林大学、中国辐射防护研究院。

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本标准于1996年首次发布为GB 16386-1996，2002年第一次修订转化为GBZ 97-2002，2017年第二次修订为GBZ 97-2017，本次为第三次修订。

职业性放射性肿瘤判断规范

1 范围

本标准规定了职业性放射性肿瘤的判断依据以及病因概率计算的技术要求。

本标准适用于职业照射后发生的肿瘤的病因学判断。

本标准不适用自愿接受医疗照射后发生的恶性肿瘤的病因判断。

2 规范性引用文件

下列文件对于本文件的应用是必不可少的。凡是注日期的引用文件，仅注日期的版本适用于本文件。凡是不注日期的引用文件，其最新版本（包括所有的修改单）适用于本文件。

GB/T 16149 外照射慢性放射病剂量估算规范

GBZ/T 270 矿工氡子体个人累积暴露量估算规范

GBZ 128 职业性外照射个人监测规范

GBZ 129 职业性内照射个人监测规范

GBZ 166 职业性皮肤放射性污染个人监测规范

3 术语和定义

下列术语和定义适用于本文件。

3.1

放射性肿瘤 radiogenic neoplasm

接受电离辐射后，经一定潜伏期后发生的与所受照射具有一定程度病因学联系的恶性肿瘤。

3.2

绝对危险 absolute risk; AR

一定剂量照射引起的某种癌症的超额发生率，亦即癌症概率的增加额，由受照射和未受照射人群癌症发生率之差或观察数与预期数之差得出。

3.3

相对危险 relative risk; RR

受照和未受照人群癌症发生率之比或观察数与预期数之比。**RR-1**称超额相对危险（**ERR**）。单位剂量照射引起的相对危险增加额称为超额相对危险度或超额相对危险系数。

3.4

病因概率 probability of causation; PC

所发生的某种癌症起因于既往所受照射的概率(%)，它是一定剂量照射后癌症概率增加额与癌症总概率之比。

3.5

基线发生率 baseline rate

一般人群某种癌症的自然发生率，其中实际包括了某些原因，如吸烟和本底照射等引起的危险。

3.6

氡子体照射量效应校正值 effect correction for the exposure of radon progeny

假设氡致肺癌的超额相对危险正比于氡累积暴露量(WLM)的某一幂函数，此幂函数可表示为 $ERR = ERR_{I_{WLM}} \times WLM^{0.82}$ 。

3.7

剂量和剂量率效应因子 dose and dose-rate effectiveness factor; DDREF

与高剂量和高剂量率照射相比较，在低剂量和低剂量率时辐射照射的生物效应相对较低的因数。

4 判断原则

4.1 受照后，经一定潜伏期后发生，并且得到临床确诊的原发性恶性肿瘤。

4.2 根据患者性别、受照时年龄、发病潜伏期和受照剂量，按第6章计算所患恶性肿瘤起因于所受照射的病因概率(PC)。

4.3 计算所得95%可信上限的 $PC \geq 50\%$ 者，可判断为职业性放射性肿瘤。

5 放射致癌病因概率的计算

5.1 为计算病因概率(PC)，需用用人单位提供下列资料：

- a) 患者的姓名、性别、年龄、癌症诊断(包括原发部位和细胞学类型)、癌症诊断依据、诊断日期和诊断单位；
- b) 由个人剂量档案或有关记载获得该人接受射线的种类、照射条件、开始受照时间和照射延续时间；估算或重建受到有关照射的靶器官吸收剂量。剂量估算方法可参照GB/T 16149、GBZ 128、GBZ 129、GBZ 166和GB/T 17982的规定执行；
- c) 兼有化学致癌物质职业性暴露时，应对致癌物的种类、暴露水平和暴露时间加以说明；
- d) 氡子体的个人累积暴露量按GB/T 18198估算。

5.2 根据5.1所列资料，按照第6章内容计算所患癌症起因于既往照射的PC值。

6 放射致癌病因概率计算方法

6.1 放射致癌超额相对危险(ERR)和放射致癌病因概率(PC)计算，见附录A。

6.2 可用本标准计算病因概率的肿瘤名单，见附录B。

6.3 中国人放射致癌超额相对危险系数表，见附录C。

6.4 氡致肺癌超额相对危险(ERR)的计算，见附录D。

- 6.5 外照射致肺癌吸烟校正因子，见附录E。
- 6.6 放射致癌潜伏期校正因子，见附录F。
- 6.7 95%可信限上限病因概率的估算，见附录G。
- 6.8 放射致癌病因概率（*PC*）计算实例，见附录H。

附录A (规范性附录)

放射致癌超额相对危险和病因概率计算

A.1 病因概率(PC)的计算方法

病因概率 PC 表示个人所患癌症起因于既往所受一定剂量照射的可能性,是一定剂量照射后癌症概率增加额与癌症总概率之比,用癌症相对危险增加值 ERR 计算,见公式(A.1):

$$PC = \frac{ERR}{1 + ERR} \times 100\% \quad (A.1)$$

式中:

PC ——放射致癌病因概率;

ERR ——放射致癌超额相对危险。

A.2 癌超额相对危险(ERR)的计算和校正

A.2.1 ERR 的计算: ERR 为靶器官吸收剂量 $F(D)$ (单位Gy)乘以由附录C提供的中国人肿瘤别、性别别、受照年龄(岁, e)别、发病年龄(岁, a)别 ERR/Gy 值。见公式(A.2):

$$ERR = F(D) \times ERR_{Gy} \quad (A.2)$$

式中:

ERR ——放射致癌超额相对危险;

$F(D)$ ——剂量函数, D 为靶器官吸收剂量。对实体癌 $F(D)=D$; 对白血病 $F(D)=D \times (1+0.87 \times D)$;

ERR_{Gy} ——单位剂量(每Gy)超额相对危险。

A.2.2 多次照射 ERR 的计算: 当接受多次照射时,如接受剂量分别为 D_1 和 D_2 的两次照射时,用相互作用的相加模型,其合计的相对危险增加为各自相对危险之和,见公式(A.3):

$$ERR_{(D_1, D_2)} = ERR_{(D_1)} + ERR_{(D_2)} \quad (A.3)$$

式中:

$ERR_{(D_1, D_2)}$ ——接受剂量分别为 D_1 和 D_2 两次照射时的超额相对危险;

$ERR_{(D_1)}$ ——接受剂量为 D_1 一次照射时的超额相对危险;

$ERR_{(D_2)}$ ——接受剂量为 D_2 一次照射时的超额相对危险。

A.2.3 复合照射 ERR 的计算: 当接受剂量为 D ,复合化学因子 Z 时,也按相加模型计算 ERR 合计值,见公式(A.4):

$$ERR_{(D, Z)} = ERR_{(D)} + ERR_{(Z)} \quad (A.4)$$

式中:

$ERR_{(D, Z)}$ ——接受剂量为 D ,复合化学因子 Z 时的超额相对危险;

$ERR_{(D)}$ ——接受剂量为 D 时的超额相对危险;

$ERR_{(Z)}$ ——接受化学因子 Z 时的超额相对危险。

A.2.4 潜伏期校正: 对潜伏期内发生的肿瘤 ERR 进行潜伏期校正。因不同癌症的潜伏期不同,需用不同潜伏期校正因子(T_t)校正(见附录D),潜伏期(t)=发病年龄(a)-受照年龄(e),见公式(A.5):

$$ERR_{T校正} = F(D) \times ERR_{Gy} \times T_t \quad (A.5)$$

式中：

$ERR_{T校正}$ ——潜伏期校正后的超额相对危险；

$F(D)$ ——剂量函数；

ERR_{Gy} ——单位剂量的超额相对危险；

T_t ——潜伏期校正因子。

A. 2. 5吸烟的校正：外照射致肺癌还需对吸烟用吸烟校正因子（ Ws ）进行校正，见公式（A.6）：

$$ERR_{Tw校正}=F(D) \times ERR_{Gy} \times T_t \times Ws \dots\dots\dots (A.6)$$

式中：

$ERR_{Tw校正}$ ——吸烟校正后的超额相对危险系数；

$F(D)$ ——剂量函数；

ERR_{Gy} ——单位剂量的超额相对危险；

T_t ——潜伏期校正因子；

Ws ——吸烟校正因子。

A. 2. 6职业照射 ERR 计算：在计算 ERR 时，先把每年接受的累计剂量视为一次照射，按年逐年计算，求得每年的 ERR 值，再把历年得到的 ERR 值相加，得到合计 ERR ，见公式（A.7）：

$$ERR_{合计}=ERR_{第1年}+ERR_{第2年}+ERR_{第3年}+ \dots +ERR_{第n年} \dots\dots\dots (A.7)$$

式中：

$ERR_{合计}$ ——历年超额相对危险值的合计值；

$ERR_{第1年}$ ——第一年超额相对危险值；

$ERR_{第2年}$ ——第二年超额相对危险值；

$ERR_{第3年}$ ——第三年超额相对危险值；

$ERR_{第n年}$ ——第 n 年超额相对危险值。

A. 2. 7 $DDREF$ 校正：考虑到职业照射多为低LET慢性小剂量照射（年累积剂量 $\leq 0.2Gy$ ），故还需经 $DDREF$ 校正（ $DDREF=1.5$ ）。见公式（A.8）：

$$ERR_{合计校正}=\frac{ERR_{合计}}{DDREF} \dots\dots\dots (A.8)$$

式中：

$ERR_{合计校正}$ ——经剂量与剂量效应因子校正后的超额相对危险；

$ERR_{合计}$ ——逐年累加后的超额相对危险值；

$DDREF$ ——剂量和剂量率效应因子，仅用于实体癌，白血病不用此参数校正。

附录B
(规范性附录)
可用附录C计算病因概率的恶性肿瘤

可用附录C列表参数计算病因概率的肿瘤名单见表B.1。

表 B. 1 可用附录 C 计算病因概率的恶性肿瘤

癌症类型	ICD-10 主码 ^a
食管癌 (oesophagus cancer)	C15
胃癌 (stomach cancer)	C16
结肠癌 (colon cancer)	C18
肝癌 (liver cancer)	C22
外照射致肺癌 (lung cancer)	C34
骨和关节恶性肿瘤 (bone and joint cancer)	C40-41
乳腺癌 (breast cancer)	C50
膀胱癌 (bladder cancer)	C67
甲状腺癌 (thyroid cancer)	C73
除了慢性淋巴细胞白血病以外的所有类型白血病 (leukemia, less chronic lymphocytic leukemia)	C90-95 (C91.1 除外)
^a 国内现行法定采用的国际疾病分类法 (版本 10)。	

附录C

(规范性附录)

中国人放射致癌超额相对危险系数表

C.1 各种癌症ERR系数表目录

中国人放射致癌超额相对危险系数表目录见表C.1。

表C.1 中国人放射致癌超额相对危险系数表目录

表号	标题	页码
表C.2	男性胃癌 ERR_{IGY} 值	8
表C.3	男性结肠癌 ERR_{IGY} 值	14
表C.4	男性肝癌 ERR_{IGY} 值	20
表C.5	男性外照射致肺癌 ERR_{IGY} 值	26
表C.6	男性膀胱癌 ERR_{IGY} 值	32
表C.7	男性食管癌、骨和关节恶性肿瘤 ERR_{IGY} 值	38
表C.8	男性乳腺癌 ERR_{IGY} 值	
表C.9	女性胃癌 ERR_{IGY} 值	44
表C.10	女性结肠癌 ERR_{IGY} 值	50
表C.11	女性肝癌 ERR_{IGY} 值	56
表C.12	女性外照射致肺癌 ERR_{IGY} 值	62
表C.13	女性膀胱癌 ERR_{IGY} 值	68
表C.14	女性食管癌、骨和关节恶性肿瘤 ERR_{IGY} 值	74
表C.15	女性乳腺癌 ERR_{IGY} 值	80
表C.16	甲状腺癌 ERR_{IGY} 值	89
表C.17	男性除慢淋以外白血病 ERR_{IGY} 值	91
表C.18	女性除慢淋以外白血病 ERR_{IGY} 值	100

C.2 男性实体癌超额危险系数

男性几种实体癌的超额危险系数值见表C.2~表C.8。

表C.2 男性胃癌 ERR_{IGY} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	2.104	1.934	1.817	1.741	1.697	1.686	1.710	1.776	1.892	2.079	2.355	2.758
16	—	1.872	1.760	1.684	1.642	1.630	1.652	1.714	1.827	2.004	2.270	2.655
17	—	—	1.702	1.630	1.588	1.575	1.597	1.655	1.762	1.932	2.187	2.555
18	—	—	—	1.576	1.535	1.523	1.543	1.598	1.700	1.862	2.106	2.461
19	—	—	—	—	1.484	1.473	1.490	1.542	1.640	1.795	2.029	2.369
20	—	—	—	—	—	1.424	1.441	1.490	1.583	1.732	1.955	2.280

21	—	—	—	—	—	—	1.391	1.439	1.528	1.669	1.884	2.197
22	—	—	—	—	—	—	—	1.390	1.473	1.610	1.814	2.114
23	—	—	—	—	—	—	—	—	1.423	1.552	1.750	2.035
24	—	—	—	—	—	—	—	—	—	1.497	1.685	1.961
25	—	—	—	—	—	—	—	—	—	—	1.623	1.889
26	—	—	—	—	—	—	—	—	—	—	—	1.816

表C.2 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	3.319	4.051	4.875	5.537	5.707	5.273	4.502	3.701	3.020	2.488	2.084	1.777
16	3.193	3.896	4.684	5.322	5.481	5.070	4.327	3.557	2.904	2.393	2.005	1.710
17	3.073	3.745	4.502	5.116	5.267	4.869	4.160	3.420	2.793	2.303	1.929	1.646
18	2.956	3.603	4.330	4.916	5.061	4.681	3.998	3.288	2.685	2.214	1.856	1.585
19	2.842	3.465	4.162	4.726	4.865	4.496	3.841	3.160	2.582	2.130	1.787	1.525
20	2.735	3.331	3.999	4.539	4.674	4.321	3.692	3.038	2.483	2.049	1.719	1.467
21	2.633	3.204	3.843	4.365	4.490	4.153	3.549	2.921	2.388	1.970	1.654	1.413
22	2.532	3.080	3.695	4.195	4.318	3.991	3.411	2.808	2.296	1.896	1.591	1.360
23	2.437	2.963	3.555	4.029	4.149	3.836	3.278	2.700	2.208	1.824	1.531	1.309
24	2.346	2.850	3.415	3.874	3.985	3.686	3.152	2.595	2.123	1.754	1.474	1.260
25	2.257	2.740	3.282	3.724	3.832	3.544	3.029	2.495	2.042	1.688	1.418	1.213
26	2.171	2.634	3.157	3.578	3.683	3.405	2.913	2.399	1.964	1.624	1.365	1.168
27	2.089	2.535	3.036	3.440	3.537	3.272	2.799	2.307	1.889	1.563	1.313	1.124
28	—	2.439	2.919	3.306	3.400	3.145	2.690	2.217	1.817	1.503	1.264	1.082
29	—	—	2.806	3.177	3.269	3.022	2.586	2.133	1.747	1.445	1.217	1.042
30+	—	—	—	3.055	3.140	2.905	2.487	2.050	1.680	1.391	1.171	1.003

表C.2 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	1.541	1.356	1.210	1.093	0.996	0.915	0.848	0.791	0.741	0.698	0.661	0.628
16	1.483	1.306	1.166	1.053	0.960	0.882	0.818	0.763	0.715	0.674	0.637	0.606
17	1.428	1.258	1.123	1.014	0.925	0.851	0.788	0.735	0.690	0.650	0.615	0.584
18	1.375	1.212	1.082	0.977	0.892	0.820	0.760	0.709	0.665	0.627	0.594	0.564
19	1.324	1.167	1.042	0.942	0.860	0.791	0.733	0.684	0.641	0.605	0.573	0.544
20	1.274	1.124	1.004	0.907	0.828	0.763	0.707	0.659	0.619	0.583	0.552	0.525
21	1.227	1.082	0.967	0.874	0.799	0.735	0.682	0.636	0.597	0.563	0.533	0.507
22	1.182	1.043	0.932	0.843	0.770	0.708	0.657	0.613	0.576	0.543	0.514	0.489
23	1.138	1.004	0.898	0.812	0.742	0.683	0.634	0.592	0.556	0.524	0.496	0.472
24	1.096	0.968	0.865	0.782	0.715	0.659	0.611	0.571	0.536	0.506	0.479	0.456
25	1.055	0.931	0.834	0.754	0.689	0.635	0.589	0.551	0.517	0.487	0.462	0.440
26	1.016	0.898	0.804	0.727	0.664	0.613	0.568	0.531	0.499	0.471	0.446	0.424
27	0.979	0.864	0.774	0.701	0.640	0.591	0.548	0.512	0.481	0.454	0.430	0.410
28	0.942	0.832	0.746	0.675	0.617	0.569	0.529	0.494	0.464	0.438	0.415	0.395
29	0.908	0.802	0.719	0.651	0.595	0.549	0.510	0.477	0.448	0.423	0.401	0.381
30+	0.874	0.772	0.692	0.627	0.574	0.529	0.492	0.460	0.432	0.408	0.387	0.368

表C.2 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	0.598	0.572	0.549	0.527	0.508	0.491	0.475	0.460	0.447	0.434	0.424	0.413
16	0.577	0.552	0.529	0.508	0.490	0.473	0.458	0.444	0.431	0.420	0.409	0.399
17	0.557	0.533	0.511	0.491	0.473	0.457	0.442	0.429	0.417	0.405	0.395	0.385
18	0.538	0.514	0.493	0.474	0.457	0.442	0.427	0.414	0.402	0.391	0.381	0.372
19	0.519	0.496	0.476	0.458	0.441	0.426	0.412	0.399	0.388	0.378	0.368	0.359
20	0.501	0.479	0.459	0.442	0.426	0.411	0.398	0.386	0.375	0.364	0.355	0.347
21	0.483	0.462	0.443	0.427	0.411	0.397	0.385	0.372	0.362	0.352	0.343	0.335
22	0.466	0.446	0.428	0.411	0.397	0.383	0.371	0.360	0.349	0.340	0.331	0.323
23	0.450	0.431	0.413	0.397	0.383	0.370	0.358	0.348	0.337	0.328	0.320	0.312
24	0.435	0.416	0.399	0.383	0.370	0.357	0.346	0.336	0.326	0.317	0.309	0.301
25	0.419	0.401	0.385	0.371	0.357	0.345	0.334	0.324	0.315	0.306	0.298	0.291
26	0.405	0.387	0.372	0.357	0.345	0.333	0.322	0.313	0.304	0.296	0.288	0.281
27	0.390	0.374	0.359	0.345	0.333	0.322	0.312	0.302	0.293	0.286	0.279	0.271
28	0.377	0.361	0.346	0.333	0.322	0.311	0.301	0.292	0.283	0.276	0.269	0.262
29	0.364	0.348	0.334	0.322	0.310	0.300	0.291	0.282	0.274	0.266	0.259	0.254
30+	0.352	0.337	0.323	0.311	0.300	0.290	0.281	0.272	0.264	0.257	0.251	0.245

表C.2 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.404	0.395	0.387	0.380	0.373	0.367	0.363	0.358	0.354	0.350	0.347	0.346
16	0.390	0.382	0.374	0.367	0.361	0.355	0.350	0.346	0.342	0.339	0.336	0.333
17	0.377	0.368	0.361	0.354	0.348	0.343	0.338	0.334	0.330	0.326	0.324	0.322
18	0.363	0.356	0.349	0.342	0.336	0.331	0.327	0.322	0.318	0.315	0.313	0.310
19	0.351	0.344	0.336	0.331	0.324	0.319	0.315	0.311	0.307	0.304	0.302	0.300
20	0.339	0.332	0.325	0.319	0.314	0.309	0.304	0.300	0.297	0.294	0.291	0.289
21	0.327	0.320	0.314	0.308	0.303	0.298	0.293	0.290	0.286	0.283	0.281	0.279
22	0.316	0.309	0.303	0.298	0.292	0.288	0.284	0.280	0.277	0.274	0.271	0.270
23	0.305	0.299	0.293	0.287	0.282	0.277	0.274	0.270	0.267	0.264	0.262	0.260
24	0.295	0.289	0.283	0.277	0.272	0.268	0.264	0.261	0.258	0.255	0.253	0.251
25	0.285	0.279	0.273	0.268	0.263	0.259	0.255	0.252	0.249	0.246	0.244	0.243
26	0.275	0.269	0.264	0.259	0.254	0.250	0.247	0.243	0.240	0.238	0.236	0.234
27	0.266	0.260	0.254	0.250	0.246	0.242	0.238	0.235	0.232	0.230	0.228	0.226
28	0.256	0.251	0.246	0.241	0.237	0.233	0.230	0.227	0.224	0.222	0.219	0.218
29	0.248	0.243	0.237	0.233	0.229	0.226	0.222	0.219	0.216	0.214	0.212	0.210
30+	0.239	0.234	0.230	0.225	0.221	0.217	0.215	0.211	0.209	0.207	0.205	0.204

表C.2 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.344	0.343	0.343	0.344	0.345	0.348	0.352	0.357	0.364	0.374
16	0.332	0.331	0.331	0.331	0.333	0.336	0.339	0.344	0.351	0.360
17	0.320	0.320	0.319	0.320	0.321	0.323	0.327	0.332	0.339	0.347
18	0.309	0.308	0.308	0.308	0.310	0.312	0.316	0.320	0.326	0.334
19	0.298	0.298	0.297	0.298	0.299	0.301	0.304	0.309	0.314	0.322
20	0.288	0.287	0.287	0.287	0.289	0.290	0.293	0.298	0.303	0.311
21	0.278	0.277	0.277	0.278	0.278	0.280	0.283	0.287	0.293	0.300
22	0.268	0.268	0.267	0.268	0.269	0.270	0.273	0.277	0.282	0.289
23	0.259	0.258	0.258	0.258	0.259	0.261	0.263	0.267	0.272	0.279
24	0.250	0.249	0.249	0.249	0.250	0.252	0.254	0.257	0.263	0.268
25	0.242	0.240	0.240	0.240	0.241	0.243	0.245	0.249	0.253	0.259
26	0.233	0.232	0.232	0.232	0.233	0.234	0.237	0.240	0.244	0.250
27	0.225	0.224	0.224	0.224	0.224	0.226	0.228	0.231	0.235	0.240
28	0.217	0.216	0.216	0.216	0.217	0.218	0.220	0.223	0.227	0.232
29	0.209	0.208	0.209	0.209	0.209	0.211	0.212	0.215	0.219	0.224
30+	0.202	0.202	0.201	0.201	0.202	0.203	0.205	0.208	0.211	0.216

表C.3 男性结肠癌 ERR_{16Y} 值

受照 年龄 (e)	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	41.417	48.201	55.942	64.632	74.559	85.120	96.907	109.917	123.847	138.995	155.356	14.491
16	—	46.271	53.723	62.121	71.457	81.725	92.918	105.334	118.970	133.521	149.286	13.930
17	—	—	51.807	59.614	68.658	78.632	89.232	101.354	114.093	128.049	143.219	13.392
18	—	—	—	57.410	65.862	75.243	85.848	97.075	109.520	122.880	137.453	12.877
19	—	—	—	—	63.368	72.456	82.467	93.399	105.248	118.013	131.989	12.386
20	—	—	—	—	—	69.371	79.089	89.725	100.979	113.447	126.828	11.918
21	—	—	—	—	—	—	76.012	86.053	97.011	108.884	121.668	11.452
22	—	—	—	—	—	—	—	82.684	93.046	104.322	116.810	11.009
23	—	—	—	—	—	—	—	—	89.382	100.362	111.954	10.589
24	—	—	—	—	—	—	—	—	—	96.404	107.698	10.193
25	—	—	—	—	—	—	—	—	—	—	103.445	9.797
26	—	—	—	—	—	—	—	—	—	—	—	9.425

表C.3 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	6.367	4.712	3.966	3.528	3.233	3.016	2.849	2.715	2.604	2.510	2.430	2.359
16	6.130	4.541	3.827	3.406	3.121	2.913	2.751	2.622	2.515	2.424	2.346	2.278
17	5.908	4.379	3.693	3.288	3.013	2.813	2.657	2.533	2.429	2.342	2.267	2.200
18	5.694	4.227	3.563	3.175	2.911	2.716	2.566	2.446	2.346	2.261	2.189	2.125
19	5.482	4.076	3.439	3.064	2.811	2.624	2.479	2.363	2.267	2.185	2.114	2.052
20	5.279	3.931	3.320	2.958	2.714	2.533	2.394	2.282	2.189	2.111	2.042	1.982
21	5.091	3.791	3.203	2.857	2.620	2.448	2.313	2.204	2.114	2.038	1.972	1.914
22	4.904	3.657	3.091	2.758	2.531	2.364	2.235	2.130	2.042	1.969	1.905	1.849
23	4.726	3.528	2.985	2.662	2.444	2.283	2.158	2.057	1.974	1.902	1.840	1.786
24	4.556	3.400	2.879	2.571	2.360	2.206	2.085	1.987	1.906	1.837	1.778	1.726
25	4.388	3.282	2.780	2.483	2.280	2.131	2.014	1.920	1.841	1.775	1.718	1.666
26	4.227	3.164	2.683	2.397	2.201	2.059	1.945	1.855	1.780	1.715	1.660	1.610
27	4.075	3.052	2.592	2.315	2.128	1.989	1.880	1.792	1.719	1.657	1.603	1.555
28	—	2.945	2.501	2.236	2.055	1.921	1.816	1.731	1.661	1.601	1.548	1.503
29	—	—	2.412	2.159	1.985	1.856	1.754	1.673	1.605	1.547	1.496	1.452
30+	—	—	—	2.084	1.917	1.792	1.695	1.616	1.550	1.495	1.446	1.403

表C.3 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	2.296	2.238	2.185	2.133	2.084	2.035	1.986	1.937	1.887	1.836	1.784	1.731
16	2.218	2.161	2.109	2.060	2.012	1.965	1.917	1.870	1.822	1.772	1.722	1.672
17	2.141	2.087	2.037	1.989	1.942	1.896	1.851	1.805	1.758	1.711	1.663	1.613
18	2.067	2.015	1.967	1.920	1.876	1.831	1.787	1.743	1.698	1.651	1.605	1.558
19	1.997	1.946	1.899	1.855	1.811	1.768	1.726	1.682	1.639	1.594	1.550	1.504
20	1.928	1.879	1.833	1.790	1.749	1.707	1.666	1.624	1.582	1.539	1.496	1.452
21	1.862	1.815	1.771	1.729	1.689	1.648	1.609	1.568	1.528	1.486	1.444	1.401
22	1.799	1.753	1.711	1.670	1.630	1.591	1.553	1.514	1.474	1.435	1.394	1.353
23	1.738	1.693	1.652	1.613	1.574	1.537	1.500	1.462	1.424	1.385	1.346	1.306
24	1.679	1.636	1.595	1.557	1.520	1.484	1.448	1.412	1.375	1.338	1.299	1.262
25	1.621	1.579	1.541	1.504	1.468	1.433	1.398	1.363	1.327	1.291	1.255	1.218
26	1.566	1.525	1.488	1.452	1.417	1.384	1.350	1.316	1.282	1.247	1.211	1.176
27	1.513	1.474	1.437	1.403	1.369	1.336	1.304	1.271	1.237	1.204	1.170	1.136
28	1.462	1.423	1.388	1.354	1.322	1.291	1.259	1.227	1.195	1.163	1.130	1.096
29	1.412	1.375	1.341	1.309	1.277	1.246	1.216	1.185	1.154	1.123	1.091	1.059
30+	1.363	1.328	1.296	1.264	1.233	1.204	1.174	1.145	1.115	1.084	1.054	1.023

表C.3 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	1.678	1.625	1.572	1.520	1.469	1.419	1.371	1.325	1.280	1.238	1.197	1.159
16	1.620	1.569	1.518	1.468	1.419	1.370	1.324	1.279	1.236	1.195	1.156	1.119
17	1.564	1.515	1.466	1.417	1.370	1.323	1.279	1.235	1.194	1.154	1.116	1.081
18	1.510	1.462	1.415	1.369	1.322	1.278	1.234	1.193	1.153	1.115	1.078	1.044
19	1.458	1.412	1.366	1.321	1.277	1.234	1.193	1.152	1.113	1.077	1.042	1.009
20	1.408	1.363	1.319	1.276	1.233	1.192	1.151	1.113	1.076	1.040	1.006	0.974
21	1.359	1.316	1.274	1.231	1.190	1.151	1.112	1.074	1.039	1.004	0.972	0.941
22	1.312	1.271	1.230	1.189	1.150	1.111	1.074	1.038	1.003	0.970	0.939	0.909
23	1.267	1.227	1.188	1.148	1.110	1.073	1.037	1.002	0.969	0.937	0.907	0.878
24	1.223	1.185	1.146	1.109	1.072	1.037	1.001	0.968	0.936	0.905	0.876	0.848
25	1.181	1.144	1.107	1.071	1.036	1.001	0.967	0.935	0.904	0.875	0.846	0.820
26	1.140	1.105	1.069	1.034	1.000	0.966	0.934	0.903	0.873	0.845	0.818	0.792
27	1.101	1.066	1.032	0.999	0.966	0.933	0.903	0.873	0.844	0.816	0.790	0.765
28	1.064	1.030	0.997	0.964	0.933	0.902	0.872	0.842	0.815	0.789	0.764	0.740
29	1.027	0.995	0.963	0.931	0.901	0.871	0.842	0.814	0.788	0.762	0.737	0.715
30+	0.992	0.961	0.930	0.900	0.870	0.841	0.813	0.787	0.761	0.736	0.713	0.691

表C.3 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	1.122	1.088	1.055	1.026	0.997	0.970	0.945	0.921	0.900	0.879	0.861	0.844
16	1.084	1.051	1.020	0.990	0.963	0.937	0.913	0.891	0.870	0.850	0.832	0.815
17	1.047	1.015	0.985	0.957	0.930	0.906	0.882	0.861	0.840	0.821	0.804	0.788
18	1.011	0.981	0.952	0.924	0.899	0.875	0.853	0.832	0.812	0.794	0.777	0.761
19	0.977	0.948	0.919	0.893	0.869	0.845	0.824	0.803	0.784	0.767	0.751	0.735
20	0.944	0.915	0.888	0.863	0.839	0.817	0.796	0.776	0.758	0.741	0.725	0.711
21	0.912	0.884	0.859	0.834	0.811	0.790	0.770	0.750	0.733	0.716	0.701	0.687
22	0.881	0.855	0.829	0.806	0.783	0.763	0.744	0.725	0.708	0.692	0.678	0.664
23	0.851	0.826	0.802	0.779	0.757	0.737	0.718	0.701	0.684	0.669	0.655	0.641
24	0.822	0.798	0.774	0.752	0.732	0.712	0.694	0.677	0.662	0.647	0.633	0.620
25	0.795	0.771	0.748	0.727	0.707	0.688	0.671	0.655	0.639	0.625	0.612	0.600
26	0.767	0.745	0.723	0.703	0.684	0.665	0.648	0.632	0.618	0.604	0.592	0.580
27	0.742	0.720	0.699	0.679	0.661	0.643	0.627	0.612	0.598	0.584	0.572	0.560
28	0.717	0.695	0.675	0.656	0.638	0.621	0.606	0.591	0.578	0.564	0.552	0.542
29	0.692	0.672	0.652	0.634	0.617	0.601	0.586	0.571	0.558	0.546	0.534	0.523
30+	0.669	0.650	0.631	0.613	0.596	0.581	0.566	0.553	0.540	0.527	0.517	0.506

表C.3 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.828	0.813	0.800	0.788	0.777	0.768	0.761	0.755	0.751	0.750
16	0.800	0.786	0.773	0.761	0.751	0.743	0.736	0.730	0.726	0.724
17	0.773	0.759	0.747	0.735	0.726	0.718	0.710	0.705	0.702	0.700
18	0.747	0.734	0.722	0.711	0.701	0.694	0.686	0.681	0.677	0.676
19	0.722	0.709	0.697	0.687	0.678	0.670	0.664	0.658	0.654	0.653
20	0.697	0.685	0.674	0.664	0.655	0.647	0.641	0.636	0.633	0.631
21	0.674	0.662	0.651	0.642	0.633	0.626	0.619	0.615	0.611	0.609
22	0.651	0.640	0.630	0.620	0.612	0.604	0.599	0.594	0.590	0.589
23	0.630	0.618	0.608	0.599	0.591	0.585	0.579	0.574	0.570	0.568
24	0.609	0.598	0.588	0.579	0.571	0.565	0.559	0.554	0.551	0.549
25	0.589	0.578	0.568	0.560	0.552	0.546	0.540	0.536	0.533	0.531
26	0.569	0.558	0.549	0.541	0.534	0.528	0.522	0.518	0.515	0.513
27	0.549	0.540	0.531	0.523	0.516	0.510	0.505	0.500	0.498	0.495
28	0.531	0.522	0.514	0.505	0.499	0.493	0.487	0.484	0.481	0.479
29	0.514	0.504	0.496	0.489	0.482	0.476	0.471	0.467	0.464	0.463
30+	0.497	0.487	0.479	0.472	0.466	0.460	0.456	0.452	0.449	0.447

表C.4 男性肝癌 ERR_{16Y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	2.468	2.263	2.092	1.951	1.839	1.764	1.733	1.759	1.814	1.809	1.687	1.523
16	—	2.196	2.030	1.893	1.785	1.710	1.681	1.701	1.756	1.749	1.634	1.474
17	—	—	1.969	1.837	1.732	1.657	1.629	1.646	1.700	1.695	1.582	1.427
18	—	—	—	1.782	1.679	1.609	1.579	1.596	1.645	1.637	1.527	1.381
19	—	—	—	—	1.630	1.559	1.530	1.543	1.591	1.585	1.477	1.335
20	—	—	—	—	—	1.514	1.483	1.496	1.539	1.530	1.432	1.294
21	—	—	—	—	—	—	1.437	1.450	1.487	1.480	1.385	1.251
22	—	—	—	—	—	—	—	1.404	1.442	1.432	1.338	1.211
23	—	—	—	—	—	—	—	—	1.398	1.385	1.296	1.172
24	—	—	—	—	—	—	—	—	—	1.344	1.255	1.133
25	—	—	—	—	—	—	—	—	—	—	1.214	1.099
26	—	—	—	—	—	—	—	—	—	—	—	1.062

表C.4 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	1.375	1.257	1.164	1.087	1.023	0.969	0.921	0.879	0.841	0.807	0.776	0.748
16	1.332	1.218	1.127	1.053	0.992	0.939	0.893	0.852	0.816	0.783	0.752	0.725
17	1.289	1.179	1.092	1.021	0.961	0.910	0.865	0.826	0.790	0.758	0.729	0.703
18	1.247	1.141	1.058	0.989	0.931	0.882	0.839	0.801	0.766	0.735	0.707	0.681
19	1.208	1.106	1.024	0.958	0.902	0.855	0.813	0.776	0.743	0.712	0.685	0.660
20	1.170	1.072	0.992	0.928	0.875	0.828	0.788	0.752	0.720	0.691	0.664	0.640
21	1.131	1.037	0.961	0.900	0.848	0.803	0.764	0.729	0.698	0.670	0.644	0.621
22	1.097	1.004	0.932	0.872	0.821	0.778	0.740	0.707	0.676	0.649	0.624	0.601
23	1.061	0.973	0.902	0.845	0.796	0.754	0.718	0.685	0.656	0.629	0.605	0.583
24	1.029	0.943	0.874	0.818	0.772	0.731	0.696	0.664	0.636	0.610	0.587	0.565
25	0.995	0.914	0.847	0.793	0.747	0.708	0.674	0.643	0.616	0.591	0.569	0.548
26	0.963	0.885	0.821	0.768	0.724	0.687	0.653	0.624	0.597	0.573	0.551	0.531
27	0.933	0.856	0.795	0.745	0.703	0.665	0.633	0.604	0.579	0.556	0.534	0.515
28	—	0.830	0.770	0.722	0.680	0.645	0.614	0.587	0.561	0.539	0.518	0.499
29	—	—	0.747	0.699	0.660	0.625	0.596	0.568	0.544	0.522	0.502	0.484
30+	—	—	—	0.677	0.640	0.606	0.577	0.551	0.528	0.506	0.487	0.469

表C.4 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	0.722	0.698	0.676	0.656	0.637	0.619	0.603	0.588	0.574	0.561	0.549	0.539
16	0.700	0.676	0.655	0.635	0.617	0.600	0.585	0.569	0.557	0.544	0.533	0.522
17	0.678	0.656	0.635	0.616	0.598	0.582	0.566	0.552	0.539	0.527	0.516	0.505
18	0.657	0.635	0.616	0.597	0.579	0.564	0.549	0.535	0.523	0.511	0.500	0.490
19	0.638	0.616	0.597	0.578	0.562	0.546	0.532	0.519	0.506	0.494	0.484	0.475
20	0.618	0.597	0.578	0.561	0.545	0.529	0.515	0.503	0.490	0.479	0.469	0.460
21	0.599	0.578	0.560	0.544	0.527	0.513	0.499	0.487	0.475	0.465	0.455	0.445
22	0.581	0.561	0.543	0.527	0.512	0.497	0.484	0.472	0.461	0.450	0.440	0.431
23	0.563	0.544	0.527	0.510	0.495	0.482	0.469	0.458	0.447	0.436	0.427	0.418
24	0.545	0.527	0.510	0.495	0.481	0.467	0.455	0.443	0.432	0.423	0.414	0.405
25	0.529	0.511	0.495	0.480	0.466	0.453	0.441	0.429	0.419	0.409	0.401	0.393
26	0.512	0.495	0.480	0.465	0.451	0.439	0.427	0.416	0.406	0.397	0.388	0.380
27	0.497	0.480	0.465	0.451	0.437	0.426	0.414	0.404	0.394	0.385	0.376	0.368
28	0.481	0.465	0.451	0.437	0.424	0.413	0.401	0.391	0.381	0.372	0.364	0.357
29	0.467	0.451	0.437	0.423	0.411	0.400	0.389	0.379	0.370	0.361	0.353	0.346
30+	0.453	0.438	0.423	0.410	0.398	0.387	0.377	0.367	0.358	0.350	0.342	0.335

表C.4 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	0.529	0.519	0.511	0.504	0.497	0.491	0.485	0.480	0.476	0.472	0.469	0.466
16	0.512	0.503	0.495	0.487	0.481	0.474	0.469	0.465	0.461	0.457	0.454	0.451
17	0.496	0.487	0.479	0.472	0.466	0.460	0.455	0.450	0.446	0.442	0.439	0.436
18	0.481	0.472	0.465	0.458	0.451	0.445	0.440	0.435	0.432	0.428	0.425	0.422
19	0.466	0.457	0.450	0.443	0.437	0.431	0.426	0.422	0.418	0.414	0.411	0.408
20	0.451	0.443	0.436	0.429	0.423	0.417	0.412	0.408	0.404	0.401	0.398	0.395
21	0.437	0.429	0.422	0.416	0.409	0.404	0.399	0.395	0.391	0.388	0.385	0.382
22	0.423	0.416	0.409	0.402	0.396	0.391	0.387	0.383	0.378	0.375	0.372	0.370
23	0.410	0.402	0.396	0.390	0.384	0.379	0.374	0.370	0.366	0.363	0.361	0.358
24	0.397	0.390	0.384	0.377	0.372	0.367	0.363	0.359	0.355	0.352	0.349	0.346
25	0.385	0.378	0.371	0.366	0.360	0.355	0.351	0.347	0.344	0.341	0.337	0.335
26	0.373	0.366	0.360	0.354	0.349	0.344	0.340	0.336	0.332	0.330	0.327	0.325
27	0.362	0.355	0.349	0.343	0.337	0.333	0.329	0.325	0.322	0.319	0.316	0.314
28	0.350	0.343	0.337	0.332	0.327	0.323	0.319	0.315	0.312	0.309	0.306	0.304
29	0.339	0.333	0.327	0.322	0.317	0.312	0.308	0.305	0.302	0.299	0.296	0.294
30+	0.329	0.322	0.317	0.312	0.307	0.302	0.299	0.296	0.292	0.289	0.287	0.285

表C.4 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.464	0.462	0.461	0.459	0.458	0.457	0.457	0.456	0.455	0.455	0.455	0.455
16	0.449	0.447	0.445	0.444	0.443	0.442	0.441	0.440	0.440	0.440	0.440	0.439
17	0.434	0.432	0.431	0.429	0.428	0.427	0.427	0.426	0.425	0.425	0.425	0.424
18	0.420	0.418	0.416	0.415	0.414	0.413	0.412	0.412	0.411	0.410	0.411	0.410
19	0.406	0.405	0.403	0.402	0.400	0.400	0.399	0.398	0.398	0.397	0.396	0.396
20	0.393	0.391	0.389	0.388	0.387	0.386	0.385	0.384	0.384	0.384	0.383	0.383
21	0.380	0.378	0.377	0.375	0.374	0.373	0.373	0.372	0.371	0.371	0.370	0.370
22	0.368	0.366	0.365	0.363	0.362	0.361	0.360	0.359	0.358	0.358	0.358	0.357
23	0.356	0.354	0.352	0.351	0.350	0.349	0.348	0.347	0.347	0.346	0.346	0.345
24	0.344	0.342	0.341	0.339	0.338	0.338	0.336	0.336	0.335	0.335	0.334	0.334
25	0.333	0.332	0.329	0.328	0.328	0.326	0.325	0.325	0.324	0.323	0.323	0.322
26	0.322	0.321	0.319	0.318	0.316	0.316	0.315	0.314	0.313	0.313	0.312	0.311
27	0.312	0.310	0.309	0.307	0.306	0.305	0.304	0.303	0.303	0.302	0.301	0.301
28	0.302	0.300	0.299	0.297	0.296	0.295	0.294	0.293	0.292	0.292	0.291	0.290
29	0.292	0.290	0.289	0.288	0.287	0.285	0.284	0.284	0.283	0.282	0.282	0.281
30+	0.283	0.281	0.279	0.278	0.277	0.276	0.275	0.274	0.273	0.273	0.272	0.272

表C.4 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.455	0.455	0.456	0.457	0.458	0.460	0.464	0.468	0.474	0.481
16	0.439	0.440	0.440	0.441	0.442	0.445	0.447	0.452	0.457	0.465
17	0.425	0.424	0.425	0.426	0.427	0.429	0.431	0.436	0.441	0.448
18	0.410	0.410	0.410	0.411	0.412	0.414	0.417	0.420	0.425	0.432
19	0.396	0.396	0.396	0.397	0.398	0.400	0.402	0.405	0.411	0.417
20	0.383	0.382	0.383	0.383	0.384	0.386	0.388	0.392	0.396	0.403
21	0.370	0.369	0.370	0.370	0.371	0.372	0.375	0.378	0.382	0.389
22	0.357	0.357	0.357	0.358	0.358	0.360	0.362	0.365	0.369	0.375
23	0.345	0.345	0.345	0.345	0.346	0.347	0.349	0.352	0.356	0.361
24	0.333	0.333	0.333	0.333	0.334	0.335	0.337	0.340	0.343	0.349
25	0.322	0.322	0.322	0.322	0.323	0.324	0.325	0.328	0.332	0.337
26	0.311	0.311	0.310	0.311	0.311	0.312	0.314	0.317	0.320	0.325
27	0.300	0.300	0.300	0.301	0.301	0.302	0.303	0.306	0.309	0.314
28	0.291	0.290	0.290	0.290	0.290	0.291	0.293	0.295	0.298	0.302
29	0.280	0.280	0.280	0.280	0.280	0.281	0.283	0.285	0.288	0.292
30+	0.271	0.271	0.271	0.271	0.271	0.272	0.273	0.275	0.278	0.282

表C.5 男性外照射致肺癌 ERR_{1Gy} 值

受照年龄(e) 岁	患癌年龄($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	3.148	1.139	0.909	0.833	0.773	0.722	0.677	0.640	0.607	0.580	0.558	0.540
16	—	1.111	0.883	0.809	0.749	0.699	0.657	0.620	0.589	0.563	0.540	0.524
17	—	—	0.858	0.783	0.728	0.679	0.638	0.602	0.571	0.545	0.524	0.508
18	—	—	—	0.761	0.707	0.658	0.619	0.584	0.554	0.529	0.508	0.492
19	—	—	—	—	0.685	0.639	0.600	0.567	0.538	0.513	0.493	0.477
20	—	—	—	—	—	0.620	0.582	0.550	0.522	0.498	0.478	0.463
21	—	—	—	—	—	—	0.565	0.533	0.506	0.482	0.463	0.448
22	—	—	—	—	—	—	—	0.516	0.490	0.468	0.450	0.434
23	—	—	—	—	—	—	—	—	0.476	0.454	0.435	0.422
24	—	—	—	—	—	—	—	—	—	0.440	0.422	0.408
25	—	—	—	—	—	—	—	—	—	—	0.410	0.396

26	—	—	—	—	—	—	—	—	—	—	—	0.384
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表C.5 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	0.528	0.523	0.524	0.533	0.551	0.580	0.619	0.666	0.714	0.756	0.779	0.783
16	0.512	0.507	0.507	0.516	0.534	0.560	0.598	0.643	0.690	0.729	0.752	0.755
17	0.497	0.490	0.491	0.499	0.515	0.542	0.578	0.620	0.665	0.702	0.724	0.727
18	0.481	0.474	0.476	0.482	0.498	0.524	0.558	0.599	0.641	0.677	0.699	0.701
19	0.466	0.461	0.460	0.467	0.482	0.506	0.539	0.578	0.619	0.654	0.673	0.676
20	0.452	0.446	0.446	0.452	0.467	0.489	0.521	0.558	0.597	0.629	0.650	0.651
21	0.437	0.432	0.432	0.437	0.451	0.474	0.503	0.538	0.576	0.608	0.625	0.627
22	0.424	0.419	0.418	0.424	0.437	0.457	0.486	0.521	0.556	0.585	0.602	0.605
23	0.411	0.405	0.405	0.410	0.423	0.443	0.469	0.502	0.536	0.564	0.581	0.583
24	0.398	0.393	0.392	0.397	0.409	0.428	0.453	0.484	0.517	0.545	0.561	0.562
25	0.386	0.381	0.379	0.384	0.395	0.412	0.438	0.467	0.499	0.525	0.541	0.542
26	0.375	0.368	0.368	0.372	0.382	0.399	0.423	0.451	0.481	0.506	0.521	0.522
27	0.363	0.357	0.356	0.360	0.370	0.386	0.409	0.436	0.465	0.489	0.503	0.504
28	—	0.346	0.345	0.349	0.358	0.373	0.394	0.421	0.448	0.471	0.484	0.485
29	—	—	0.335	0.337	0.346	0.361	0.382	0.406	0.432	0.454	0.467	0.468
30+	—	—	—	0.327	0.335	0.350	0.369	0.393	0.417	0.438	0.450	0.451

表C.5 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	0.766	0.734	0.694	0.653	0.612	0.575	0.542	0.512	0.486	0.463	0.443	0.425
16	0.738	0.707	0.669	0.629	0.590	0.555	0.523	0.494	0.469	0.447	0.427	0.410
17	0.711	0.682	0.645	0.606	0.569	0.535	0.504	0.476	0.452	0.431	0.412	0.396
18	0.685	0.657	0.621	0.585	0.548	0.516	0.486	0.459	0.436	0.416	0.397	0.382
19	0.660	0.632	0.600	0.563	0.529	0.497	0.469	0.443	0.421	0.401	0.384	0.368
20	0.637	0.610	0.577	0.543	0.510	0.480	0.452	0.427	0.406	0.387	0.370	0.355
21	0.613	0.588	0.556	0.524	0.491	0.462	0.436	0.412	0.391	0.373	0.357	0.343
22	0.591	0.567	0.537	0.505	0.474	0.446	0.420	0.398	0.378	0.360	0.344	0.331
23	0.570	0.546	0.517	0.487	0.457	0.430	0.406	0.384	0.364	0.347	0.332	0.319
24	0.549	0.526	0.498	0.469	0.441	0.414	0.391	0.370	0.351	0.335	0.321	0.308
25	0.530	0.508	0.481	0.453	0.425	0.400	0.377	0.357	0.339	0.323	0.309	0.297
26	0.510	0.489	0.463	0.436	0.410	0.385	0.364	0.344	0.327	0.312	0.298	0.287
27	0.492	0.472	0.447	0.420	0.395	0.372	0.351	0.332	0.316	0.301	0.288	0.277
28	0.474	0.454	0.431	0.406	0.381	0.359	0.338	0.320	0.304	0.290	0.278	0.267
29	0.457	0.438	0.415	0.391	0.368	0.346	0.326	0.309	0.294	0.280	0.268	0.258
30+	0.441	0.422	0.400	0.377	0.354	0.333	0.315	0.298	0.283	0.270	0.259	0.249

表C.5 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	0.409	0.395	0.383	0.372	0.362	0.353	0.345	0.338	0.332	0.327	0.322	0.318
16	0.395	0.381	0.369	0.359	0.349	0.341	0.333	0.327	0.321	0.315	0.311	0.307
17	0.381	0.368	0.356	0.346	0.337	0.329	0.322	0.315	0.309	0.304	0.300	0.296
18	0.368	0.355	0.344	0.334	0.325	0.317	0.310	0.304	0.298	0.294	0.289	0.285
19	0.355	0.343	0.332	0.322	0.314	0.306	0.299	0.293	0.288	0.283	0.279	0.275
20	0.342	0.331	0.320	0.311	0.303	0.295	0.289	0.283	0.278	0.273	0.269	0.266
21	0.330	0.319	0.309	0.300	0.292	0.285	0.279	0.273	0.268	0.264	0.260	0.256
22	0.319	0.308	0.298	0.289	0.282	0.275	0.269	0.264	0.258	0.254	0.250	0.247
23	0.307	0.297	0.288	0.280	0.272	0.265	0.259	0.254	0.250	0.245	0.242	0.238
24	0.297	0.287	0.278	0.270	0.263	0.256	0.251	0.245	0.241	0.237	0.233	0.230
25	0.286	0.276	0.268	0.260	0.253	0.247	0.242	0.237	0.233	0.229	0.225	0.222
26	0.276	0.267	0.258	0.251	0.245	0.238	0.233	0.228	0.224	0.221	0.217	0.214
27	0.267	0.258	0.250	0.242	0.236	0.230	0.225	0.221	0.216	0.213	0.210	0.207
28	0.257	0.248	0.241	0.234	0.228	0.222	0.217	0.213	0.209	0.205	0.202	0.200
29	0.248	0.240	0.232	0.226	0.220	0.214	0.210	0.205	0.202	0.198	0.195	0.193
30+	0.240	0.232	0.224	0.218	0.212	0.207	0.202	0.198	0.195	0.191	0.188	0.186

表C.5 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.314	0.311	0.309	0.307	0.305	0.304	0.304	0.304	0.304	0.306	0.307	0.309
16	0.303	0.300	0.298	0.296	0.294	0.294	0.293	0.293	0.294	0.294	0.296	0.298
17	0.292	0.290	0.287	0.286	0.284	0.283	0.283	0.283	0.283	0.284	0.285	0.287
18	0.282	0.279	0.277	0.275	0.274	0.273	0.272	0.272	0.273	0.274	0.275	0.277
19	0.272	0.270	0.267	0.266	0.264	0.263	0.263	0.263	0.263	0.264	0.265	0.267
20	0.262	0.260	0.258	0.256	0.255	0.254	0.253	0.253	0.253	0.254	0.255	0.257
21	0.253	0.251	0.249	0.247	0.246	0.245	0.244	0.244	0.244	0.245	0.246	0.248
22	0.244	0.242	0.240	0.238	0.237	0.236	0.236	0.235	0.236	0.236	0.237	0.239
23	0.236	0.233	0.231	0.230	0.228	0.228	0.227	0.227	0.227	0.228	0.229	0.230
24	0.227	0.225	0.223	0.222	0.220	0.220	0.219	0.219	0.219	0.220	0.221	0.222
25	0.219	0.217	0.215	0.214	0.213	0.212	0.211	0.211	0.211	0.212	0.213	0.214
26	0.212	0.210	0.208	0.206	0.205	0.204	0.204	0.204	0.204	0.204	0.205	0.206
27	0.204	0.202	0.200	0.199	0.198	0.197	0.197	0.196	0.197	0.197	0.198	0.199
28	0.197	0.195	0.193	0.192	0.191	0.190	0.189	0.189	0.189	0.190	0.191	0.192
29	0.190	0.188	0.187	0.185	0.184	0.183	0.183	0.183	0.183	0.183	0.184	0.185
30+	0.184	0.182	0.180	0.179	0.178	0.177	0.176	0.176	0.176	0.177	0.177	0.178

表C.5 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.312	0.315	0.320	0.325	0.330	0.337	0.345	0.354	0.364	0.376
16	0.301	0.304	0.308	0.313	0.318	0.325	0.332	0.341	0.350	0.362
17	0.290	0.293	0.297	0.301	0.307	0.313	0.319	0.328	0.337	0.348
18	0.279	0.282	0.286	0.290	0.295	0.301	0.308	0.316	0.325	0.335
19	0.269	0.272	0.275	0.279	0.284	0.290	0.296	0.304	0.313	0.322
20	0.259	0.262	0.265	0.269	0.274	0.279	0.285	0.293	0.301	0.310
21	0.250	0.253	0.256	0.259	0.264	0.269	0.275	0.282	0.290	0.299
22	0.241	0.243	0.246	0.250	0.254	0.259	0.265	0.271	0.279	0.288
23	0.232	0.235	0.237	0.241	0.245	0.249	0.255	0.261	0.269	0.277
24	0.224	0.226	0.229	0.232	0.236	0.240	0.246	0.251	0.258	0.266
25	0.216	0.218	0.220	0.223	0.227	0.232	0.236	0.242	0.249	0.257
26	0.208	0.210	0.212	0.215	0.219	0.223	0.228	0.233	0.240	0.247
27	0.200	0.202	0.205	0.208	0.211	0.215	0.219	0.225	0.231	0.238
28	0.193	0.195	0.197	0.200	0.203	0.207	0.211	0.216	0.222	0.229
29	0.186	0.188	0.190	0.193	0.196	0.199	0.204	0.208	0.214	0.220
30+	0.179	0.181	0.183	0.186	0.189	0.192	0.196	0.201	0.206	0.212

表C. 6男性膀胱癌 ERR_{16y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	4.123	3.792	3.508	3.562	3.345	3.456	3.587	3.736	4.201	4.680	5.470	6.270
16	—	3.689	3.414	3.474	3.265	3.380	3.516	3.670	4.139	4.621	5.114	5.918
17	—	—	3.321	3.089	3.186	3.307	3.448	3.606	3.779	4.265	5.061	5.867
18	—	—	—	3.007	3.109	3.235	3.381	3.544	3.721	4.210	4.709	5.518
19	—	—	—	—	3.035	3.167	3.017	3.483	3.663	4.156	4.658	5.170
20	—	—	—	—	—	2.799	2.954	3.125	3.609	3.804	4.309	5.123
21	—	—	—	—	—	—	2.894	3.068	3.555	3.753	4.262	4.778
22	—	—	—	—	—	—	—	3.013	3.203	3.705	4.215	4.735
23	—	—	—	—	—	—	—	—	3.153	3.657	3.871	4.692
24	—	—	—	—	—	—	—	—	—	3.311	3.827	4.351
25	—	—	—	—	—	—	—	—	—	—	3.785	4.311
26	—	—	—	—	—	—	—	—	—	—	—	3.973

表C.6 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	2.212	1.794	1.659	1.570	1.496	1.435	1.380	1.333	1.291	1.256	1.224	1.197
16	2.162	1.739	1.609	1.520	1.452	1.391	1.338	1.293	1.252	1.217	1.186	1.159
17	2.085	1.684	1.560	1.476	1.407	1.349	1.298	1.254	1.215	1.179	1.149	1.125
18	2.008	1.631	1.513	1.432	1.363	1.307	1.258	1.215	1.176	1.144	1.115	1.090
19	1.963	1.580	1.467	1.385	1.323	1.267	1.220	1.177	1.141	1.109	1.080	1.056
20	1.889	1.538	1.422	1.344	1.282	1.230	1.183	1.143	1.106	1.074	1.047	1.023
21	1.817	1.488	1.379	1.304	1.244	1.192	1.147	1.107	1.072	1.042	1.015	0.991
22	1.776	1.441	1.336	1.264	1.207	1.156	1.112	1.074	1.040	1.010	0.984	0.962
23	1.706	1.402	1.295	1.227	1.169	1.121	1.078	1.041	1.008	0.979	0.954	0.931
24	1.667	1.356	1.260	1.190	1.134	1.086	1.045	1.010	0.977	0.950	0.924	0.903
25	1.599	1.312	1.220	1.153	1.100	1.055	1.015	0.979	0.947	0.920	0.896	0.875
26	1.562	1.277	1.182	1.118	1.067	1.023	0.983	0.950	0.919	0.892	0.868	0.848
27	1.497	1.234	1.144	1.084	1.035	0.991	0.954	0.920	0.890	0.864	0.842	0.822
28	—	1.192	1.113	1.050	1.003	0.961	0.924	0.892	0.863	0.838	0.817	0.796
29	—	—	1.078	1.022	0.973	0.932	0.897	0.864	0.837	0.812	0.791	0.773
30+	—	—	—	0.990	0.943	0.905	0.869	0.839	0.811	0.788	0.767	0.748

表C.6 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	1.174	1.156	1.140	1.128	1.119	1.112	1.106	1.102	1.097	1.091	1.084	1.076
16	1.138	1.119	1.105	1.093	1.083	1.076	1.070	1.066	1.060	1.055	1.048	1.040
17	1.102	1.085	1.070	1.058	1.048	1.041	1.036	1.030	1.025	1.020	1.014	1.006
18	1.068	1.050	1.036	1.025	1.016	1.008	1.002	0.998	0.992	0.987	0.981	0.972
19	1.035	1.017	1.004	0.992	0.983	0.976	0.970	0.965	0.960	0.955	0.948	0.941
20	1.003	0.987	0.972	0.961	0.952	0.945	0.939	0.934	0.929	0.923	0.917	0.909
21	0.972	0.955	0.942	0.930	0.921	0.914	0.909	0.903	0.898	0.893	0.887	0.879
22	0.942	0.925	0.912	0.901	0.892	0.885	0.879	0.874	0.869	0.864	0.857	0.850
23	0.913	0.896	0.883	0.872	0.864	0.857	0.852	0.846	0.840	0.835	0.829	0.822
24	0.884	0.869	0.855	0.845	0.836	0.830	0.823	0.819	0.814	0.808	0.802	0.795
25	0.857	0.841	0.829	0.818	0.810	0.803	0.797	0.792	0.787	0.782	0.776	0.769
26	0.830	0.816	0.803	0.793	0.785	0.777	0.772	0.767	0.762	0.756	0.751	0.744
27	0.804	0.790	0.778	0.768	0.760	0.753	0.747	0.742	0.737	0.732	0.726	0.719
28	0.779	0.765	0.754	0.744	0.735	0.729	0.723	0.718	0.713	0.708	0.702	0.695
29	0.756	0.742	0.730	0.720	0.712	0.705	0.700	0.695	0.690	0.685	0.679	0.673
30+	0.733	0.718	0.707	0.698	0.690	0.684	0.678	0.673	0.668	0.663	0.657	0.650

表C.6 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	1.067	1.054	1.041	1.026	1.009	0.992	0.975	0.956	0.938	0.920	0.903	0.887
16	1.030	1.019	1.006	0.991	0.976	0.958	0.941	0.924	0.906	0.889	0.873	0.857
17	0.996	0.985	0.972	0.958	0.942	0.926	0.909	0.892	0.876	0.859	0.843	0.827
18	0.963	0.953	0.940	0.926	0.911	0.895	0.879	0.862	0.846	0.830	0.814	0.800
19	0.931	0.921	0.908	0.895	0.881	0.865	0.849	0.833	0.818	0.802	0.787	0.772
20	0.900	0.890	0.878	0.865	0.851	0.836	0.821	0.805	0.790	0.775	0.760	0.747
21	0.870	0.860	0.848	0.836	0.822	0.808	0.793	0.778	0.764	0.749	0.735	0.722
22	0.841	0.832	0.820	0.808	0.795	0.781	0.767	0.752	0.738	0.724	0.710	0.697
23	0.813	0.804	0.793	0.781	0.768	0.754	0.741	0.727	0.713	0.700	0.686	0.673
24	0.787	0.777	0.766	0.755	0.742	0.729	0.716	0.703	0.689	0.676	0.663	0.651
25	0.761	0.752	0.741	0.730	0.717	0.705	0.692	0.679	0.666	0.653	0.641	0.629
26	0.736	0.727	0.717	0.705	0.694	0.682	0.669	0.656	0.643	0.631	0.619	0.607
27	0.712	0.702	0.693	0.682	0.671	0.659	0.647	0.634	0.622	0.610	0.599	0.588
28	0.688	0.679	0.670	0.659	0.648	0.637	0.624	0.613	0.602	0.590	0.579	0.568
29	0.666	0.657	0.648	0.637	0.627	0.615	0.604	0.592	0.581	0.570	0.559	0.549
30+	0.644	0.635	0.626	0.616	0.606	0.595	0.584	0.572	0.562	0.551	0.541	0.531

表C.6 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.871	0.856	0.842	0.829	0.817	0.806	0.797	0.788	0.781	0.774	0.769	0.765
16	0.842	0.827	0.813	0.801	0.790	0.779	0.770	0.761	0.754	0.748	0.742	0.738
17	0.813	0.799	0.786	0.774	0.763	0.753	0.743	0.735	0.728	0.722	0.717	0.713
18	0.785	0.772	0.760	0.747	0.737	0.726	0.718	0.710	0.703	0.697	0.693	0.688
19	0.759	0.746	0.734	0.722	0.712	0.702	0.693	0.685	0.679	0.673	0.669	0.665
20	0.733	0.721	0.708	0.698	0.687	0.678	0.670	0.662	0.656	0.650	0.646	0.642
21	0.709	0.696	0.685	0.674	0.664	0.655	0.647	0.640	0.633	0.628	0.624	0.620
22	0.685	0.673	0.661	0.651	0.642	0.633	0.625	0.618	0.612	0.606	0.602	0.599
23	0.661	0.650	0.639	0.629	0.620	0.612	0.604	0.597	0.591	0.586	0.582	0.578
24	0.639	0.628	0.618	0.608	0.599	0.591	0.583	0.576	0.571	0.566	0.562	0.558
25	0.618	0.607	0.597	0.587	0.579	0.571	0.564	0.557	0.551	0.546	0.542	0.539
26	0.597	0.586	0.577	0.567	0.559	0.551	0.545	0.538	0.532	0.528	0.524	0.521
27	0.577	0.567	0.557	0.549	0.540	0.533	0.526	0.520	0.514	0.510	0.506	0.503
28	0.558	0.548	0.539	0.530	0.522	0.515	0.509	0.502	0.497	0.492	0.489	0.486
29	0.539	0.529	0.521	0.512	0.504	0.497	0.491	0.485	0.480	0.476	0.473	0.469
30+	0.521	0.512	0.503	0.495	0.487	0.481	0.474	0.469	0.464	0.459	0.456	0.453

表C. 6 (续)

受照年龄(<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.762	0.761	0.761	0.763	0.768	0.773	0.781	0.792	0.806	0.824
16	0.736	0.735	0.735	0.737	0.741	0.746	0.754	0.764	0.777	0.794
17	0.710	0.709	0.710	0.711	0.714	0.720	0.727	0.737	0.750	0.766
18	0.686	0.685	0.685	0.686	0.690	0.694	0.702	0.711	0.723	0.738
19	0.662	0.661	0.661	0.663	0.665	0.670	0.677	0.686	0.698	0.712
20	0.640	0.638	0.638	0.639	0.642	0.647	0.653	0.662	0.673	0.687
21	0.617	0.616	0.616	0.617	0.620	0.624	0.630	0.638	0.649	0.662
22	0.596	0.595	0.595	0.596	0.598	0.602	0.608	0.615	0.626	0.639
23	0.575	0.574	0.574	0.575	0.578	0.581	0.587	0.594	0.604	0.616
24	0.556	0.555	0.554	0.555	0.557	0.561	0.566	0.573	0.582	0.594
25	0.537	0.535	0.535	0.536	0.538	0.541	0.547	0.553	0.562	0.573
26	0.518	0.517	0.517	0.517	0.520	0.523	0.527	0.534	0.542	0.553
27	0.501	0.499	0.499	0.500	0.501	0.505	0.508	0.515	0.523	0.533
28	0.483	0.482	0.481	0.482	0.484	0.487	0.491	0.497	0.504	0.514
29	0.467	0.466	0.465	0.466	0.467	0.470	0.474	0.480	0.487	0.496
30+	0.451	0.450	0.449	0.449	0.451	0.453	0.457	0.463	0.469	0.478

表C.7 男性食管癌、骨和关节恶性肿瘤 ERR_{10Y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	14.486	12.129	10.276	8.802	7.616	6.652	5.862	5.209	4.666	4.208	3.820	3.486
16	—	11.769	9.971	8.540	7.389	6.453	5.686	5.052	4.524	4.080	3.703	3.379
17	—	—	9.675	8.286	7.168	6.260	5.516	4.900	4.387	3.956	3.589	3.275
18	—	—	—	8.039	6.954	6.073	5.350	4.752	4.254	3.836	3.480	3.174
19	—	—	—	—	6.747	5.891	5.190	4.609	4.126	3.719	3.374	3.077
20	—	—	—	—	—	5.715	5.034	4.470	4.001	3.606	3.270	2.982
21	—	—	—	—	—	—	4.883	4.335	3.880	3.496	3.170	2.890
22	—	—	—	—	—	—	—	4.206	3.762	3.390	3.074	2.802
23	—	—	—	—	—	—	—	—	3.649	3.287	2.980	2.715
24	—	—	—	—	—	—	—	—	—	3.187	2.889	2.632
25	—	—	—	—	—	—	—	—	—	—	2.801	2.551
26	—	—	—	—	—	—	—	—	—	—	—	2.473

表C.7 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	3.195	2.937	2.708	2.500	2.311	2.139	1.980	1.835	1.703	1.582	1.472	1.371
16	3.096	2.847	2.623	2.421	2.238	2.071	1.918	1.777	1.649	1.532	1.425	1.327
17	3.000	2.758	2.541	2.345	2.168	2.005	1.857	1.721	1.597	1.483	1.380	1.285
18	2.907	2.672	2.462	2.272	2.099	1.942	1.798	1.666	1.546	1.436	1.335	1.244
19	2.818	2.589	2.385	2.201	2.033	1.880	1.741	1.613	1.497	1.390	1.293	1.204
20	2.730	2.509	2.311	2.131	1.970	1.821	1.686	1.562	1.449	1.346	1.252	1.166
21	2.646	2.431	2.239	2.065	1.907	1.764	1.632	1.513	1.403	1.303	1.212	1.129
22	2.565	2.356	2.168	2.000	1.848	1.708	1.581	1.465	1.358	1.262	1.174	1.093
23	2.485	2.282	2.101	1.938	1.789	1.654	1.531	1.419	1.316	1.222	1.137	1.059
24	2.409	2.212	2.035	1.877	1.734	1.602	1.483	1.374	1.274	1.183	1.100	1.024
25	2.334	2.143	1.972	1.819	1.679	1.552	1.436	1.330	1.234	1.146	1.065	0.992
26	2.263	2.077	1.911	1.762	1.626	1.504	1.391	1.288	1.195	1.109	1.032	0.961
27	2.192	2.012	1.851	1.706	1.575	1.456	1.347	1.247	1.157	1.074	0.999	0.930
28	—	1.950	1.794	1.654	1.526	1.411	1.305	1.208	1.121	1.040	0.967	0.901
29	—	—	1.739	1.602	1.479	1.366	1.264	1.170	1.085	1.007	0.937	0.873
30+	—	—	—	1.551	1.432	1.324	1.224	1.133	1.051	0.976	0.907	0.845

表C.7 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	1.280	1.196	1.119	1.049	0.985	0.927	0.873	0.824	0.778	0.737	0.699	0.663
16	1.239	1.157	1.083	1.016	0.953	0.897	0.845	0.797	0.753	0.713	0.676	0.642
17	1.199	1.120	1.048	0.983	0.923	0.868	0.818	0.772	0.729	0.690	0.654	0.620
18	1.161	1.084	1.015	0.952	0.894	0.840	0.792	0.747	0.706	0.668	0.633	0.601
19	1.124	1.050	0.983	0.921	0.865	0.813	0.766	0.723	0.683	0.647	0.613	0.582
20	1.088	1.016	0.951	0.891	0.837	0.788	0.742	0.700	0.661	0.626	0.593	0.563
21	1.053	0.984	0.921	0.863	0.811	0.762	0.718	0.677	0.640	0.606	0.574	0.544
22	1.020	0.953	0.892	0.836	0.784	0.738	0.695	0.655	0.619	0.586	0.555	0.527
23	0.987	0.923	0.863	0.809	0.760	0.714	0.673	0.635	0.600	0.567	0.537	0.510
24	0.956	0.893	0.836	0.784	0.736	0.691	0.651	0.614	0.580	0.549	0.520	0.494
25	0.925	0.864	0.809	0.759	0.712	0.670	0.631	0.595	0.562	0.532	0.504	0.478
26	0.896	0.837	0.783	0.734	0.689	0.648	0.610	0.576	0.544	0.515	0.488	0.463
27	0.868	0.810	0.758	0.711	0.667	0.627	0.591	0.558	0.526	0.498	0.472	0.448
28	0.840	0.785	0.735	0.688	0.646	0.607	0.572	0.539	0.510	0.483	0.457	0.434
29	0.813	0.760	0.711	0.666	0.625	0.588	0.554	0.522	0.493	0.467	0.443	0.420
30+	0.788	0.736	0.688	0.645	0.606	0.569	0.536	0.506	0.478	0.452	0.428	0.406

表C.7 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	0.630	0.600	0.571	0.546	0.521	0.499	0.478	0.459	0.440	0.423	0.407	0.393
16	0.610	0.580	0.553	0.528	0.504	0.482	0.462	0.444	0.426	0.409	0.394	0.380
17	0.590	0.561	0.535	0.511	0.488	0.467	0.447	0.429	0.412	0.396	0.381	0.367
18	0.571	0.544	0.518	0.494	0.472	0.451	0.433	0.415	0.399	0.383	0.368	0.355
19	0.553	0.526	0.501	0.478	0.457	0.437	0.419	0.401	0.386	0.371	0.357	0.344
20	0.534	0.509	0.485	0.463	0.442	0.423	0.405	0.389	0.373	0.358	0.345	0.332
21	0.518	0.493	0.470	0.448	0.428	0.409	0.392	0.376	0.361	0.347	0.334	0.322
22	0.501	0.476	0.454	0.433	0.414	0.396	0.379	0.363	0.349	0.335	0.323	0.311
23	0.485	0.461	0.439	0.419	0.401	0.383	0.367	0.352	0.338	0.324	0.312	0.301
24	0.470	0.447	0.425	0.406	0.387	0.371	0.355	0.340	0.327	0.314	0.302	0.291
25	0.454	0.432	0.412	0.392	0.375	0.359	0.343	0.329	0.316	0.304	0.293	0.281
26	0.440	0.418	0.399	0.380	0.363	0.347	0.332	0.319	0.306	0.294	0.283	0.273
27	0.426	0.405	0.386	0.368	0.351	0.336	0.322	0.308	0.296	0.284	0.274	0.264
28	0.412	0.392	0.373	0.356	0.340	0.325	0.311	0.298	0.287	0.275	0.265	0.255
29	0.399	0.379	0.361	0.345	0.329	0.315	0.301	0.289	0.277	0.266	0.256	0.247
30+	0.386	0.367	0.350	0.334	0.318	0.305	0.292	0.280	0.268	0.258	0.248	0.238

表C.7 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.379	0.366	0.354	0.343	0.333	0.323	0.313	0.305	0.297	0.290	0.284	0.277
16	0.366	0.354	0.342	0.332	0.322	0.312	0.303	0.295	0.287	0.281	0.274	0.268
17	0.355	0.342	0.331	0.320	0.311	0.302	0.293	0.285	0.278	0.271	0.265	0.259
18	0.343	0.331	0.320	0.310	0.300	0.292	0.284	0.275	0.269	0.262	0.255	0.250
19	0.332	0.320	0.310	0.300	0.291	0.282	0.274	0.267	0.259	0.253	0.247	0.242
20	0.321	0.310	0.299	0.290	0.281	0.273	0.264	0.258	0.251	0.245	0.239	0.234
21	0.310	0.299	0.290	0.280	0.272	0.263	0.256	0.249	0.243	0.236	0.231	0.226
22	0.300	0.289	0.280	0.271	0.263	0.255	0.247	0.241	0.234	0.228	0.223	0.218
23	0.290	0.280	0.271	0.262	0.254	0.247	0.239	0.232	0.227	0.221	0.215	0.211
24	0.281	0.271	0.262	0.254	0.245	0.238	0.232	0.225	0.219	0.213	0.209	0.204
25	0.272	0.262	0.254	0.245	0.237	0.230	0.224	0.218	0.212	0.206	0.201	0.197
26	0.263	0.253	0.245	0.237	0.230	0.222	0.216	0.210	0.205	0.200	0.195	0.190
27	0.254	0.245	0.237	0.229	0.222	0.215	0.209	0.203	0.198	0.193	0.188	0.184
28	0.246	0.237	0.229	0.222	0.214	0.208	0.202	0.196	0.191	0.186	0.182	0.177
29	0.238	0.229	0.221	0.214	0.208	0.201	0.195	0.190	0.185	0.180	0.176	0.172
30+	0.230	0.222	0.215	0.208	0.201	0.195	0.189	0.183	0.179	0.174	0.170	0.166

表C.7 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.272	0.266	0.262	0.258	0.254	0.251	0.249	0.247	0.245	0.244
16	0.262	0.258	0.253	0.249	0.245	0.243	0.240	0.238	0.237	0.235
17	0.253	0.249	0.244	0.240	0.237	0.234	0.232	0.229	0.228	0.227
18	0.245	0.241	0.236	0.232	0.229	0.226	0.224	0.221	0.220	0.219
19	0.237	0.232	0.228	0.224	0.221	0.218	0.216	0.214	0.212	0.211
20	0.229	0.224	0.220	0.217	0.214	0.211	0.208	0.207	0.205	0.204
21	0.221	0.216	0.213	0.209	0.206	0.203	0.201	0.199	0.198	0.197
22	0.214	0.209	0.206	0.202	0.199	0.196	0.194	0.192	0.191	0.190
23	0.206	0.202	0.199	0.195	0.192	0.190	0.188	0.186	0.184	0.184
24	0.199	0.196	0.192	0.188	0.186	0.183	0.181	0.179	0.178	0.177
25	0.193	0.189	0.185	0.182	0.179	0.177	0.175	0.173	0.172	0.171
26	0.186	0.182	0.179	0.176	0.173	0.171	0.169	0.167	0.166	0.165
27	0.180	0.176	0.173	0.170	0.167	0.165	0.163	0.161	0.160	0.159
28	0.173	0.170	0.167	0.164	0.162	0.159	0.158	0.156	0.155	0.154
29	0.168	0.165	0.161	0.158	0.156	0.154	0.152	0.150	0.149	0.148
30+	0.163	0.159	0.156	0.154	0.151	0.149	0.147	0.146	0.144	0.143

表 C.8 男性乳腺癌 ERR_{1Gy} 值

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	15	16	17	18	19	20	21	22
15	315.410	177.017	140.995	127.032	121.589	120.459	121.910	125.100
16		168.384	134.119	120.836	115.659	114.584	115.964	118.999
17			127.578	114.943	110.018	108.996	110.309	113.195
18				109.337	104.652	103.680	104.929	107.675
19					99.548	98.624	99.811	102.423
20						93.814	94.943	97.428
21							90.313	92.676
22								88.157
受照年龄(e) 岁	患癌年龄(e+t) 岁							
	23	24	25	26	27	28	29	30
15	129.570	135.054	141.385	148.456	156.196	164.553	173.494	182.996
16	123.251	128.467	134.489	141.216	148.578	156.528	165.033	174.071
17	117.240	122.202	127.930	134.328	141.332	148.894	156.984	165.581
18	111.522	116.242	121.691	127.777	134.439	141.632	149.328	157.506
19	106.083	110.573	115.756	121.545	127.882	134.725	142.045	149.824
20	100.909	105.180	110.111	115.617	121.645	128.154	135.118	142.517
21	95.988	100.050	104.740	109.979	115.713	121.904	128.528	135.567
22	91.306	95.171	99.632	104.615	110.069	115.959	122.259	128.955
23	86.853	90.529	94.773	99.513	104.701	110.303	116.297	122.666
24		86.114	90.151	94.660	99.595	104.924	110.625	116.683
25			85.754	90.043	94.738	99.807	105.230	110.993
26				85.652	90.117	94.939	100.098	105.579
27					85.722	90.309	95.216	100.430
28						85.904	90.572	95.532
29							86.155	90.873
30								86.441
受照年龄(e) 岁	患癌年龄(e+t) 岁							
	31	32	33	34	35	36	37	38
15	193.041	203.617	214.715	226.332	238.462	251.107	264.264	277.933
16	183.627	193.686	204.244	215.293	226.832	238.861	251.375	264.378

表 C.8 (续)

受照年龄(e)	患癌年龄(e+t)
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岁	岁							
	31	32	33	34	35	36	37	38
17	174.671	184.240	194.282	204.793	215.770	227.211	239.116	251.484
18	166.152	175.255	184.807	194.805	205.247	216.130	227.454	239.219
19	158.049	166.707	175.794	185.305	195.237	205.589	216.361	227.552
20	150.341	158.577	167.220	176.267	185.715	195.563	205.809	216.454
21	143.009	150.843	159.065	167.671	176.657	186.025	195.771	205.898
22	136.034	143.486	151.307	159.493	168.042	176.952	186.223	195.856
23	129.399	136.488	143.928	151.715	159.846	168.322	177.141	186.304
24	123.089	129.832	136.909	144.315	152.050	160.113	168.502	177.218
25	117.085	123.500	130.231	137.277	144.635	152.304	160.284	168.575
26	111.375	117.477	123.880	130.582	137.581	144.876	152.467	160.353
27	105.943	111.747	117.838	124.213	130.871	137.811	145.031	152.533
28	100.776	106.297	112.091	118.155	124.488	131.090	137.958	145.094
29	95.861	101.113	106.624	112.393	118.417	124.696	131.229	138.017
30	91.186	96.182	101.424	106.911	112.642	118.615	124.829	131.286
31	86.739	91.491	96.478	101.697	107.148	112.830	118.741	124.883
32		87.029	91.773	96.738	101.922	107.327	112.950	118.793
33			87.297	92.020	96.952	102.093	107.442	112.999
34				87.532	92.223	97.114	102.202	107.488
35					87.725	92.377	97.217	102.246
36						87.872	92.476	97.259
37							87.966	92.516
38								88.004
受照年龄(e) 岁	患癌年龄(e+t) 岁							
	39	40	41	42	43	44	45	46
15	292.117	306.818	322.037	337.777	354.043	370.836	388.162	406.022
16	277.870	291.854	306.331	321.304	336.776	352.750	369.231	386.220
17	264.318	277.620	291.391	305.634	320.351	335.546	351.223	367.384
18	251.427	264.081	277.180	290.728	304.727	319.181	334.094	349.466
19	239.165	251.201	263.662	276.549	289.866	303.615	317.800	332.423
20	227.501	238.950	250.803	263.061	275.729	288.807	302.301	316.210
21	216.405	227.296	238.571	250.232	262.281	274.722	287.557	300.789
22	205.851	216.211	226.936	238.028	249.490	261.324	273.533	286.119

23	195.812	205.666	215.868	226.419	237.322	248.579	260.193	272.165
24	186.262	195.636	205.340	215.376	225.748	236.455	247.503	258.891

表 C.8 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	39	40	41	42	43	44	45	46
25	177.178	186.095	195.325	204.872	214.738	224.923	235.432	246.265
26	168.537	177.019	185.799	194.881	204.265	213.954	223.950	234.254
27	160.317	168.385	176.738	185.376	194.303	203.519	213.028	222.830
28	152.498	160.173	168.118	176.335	184.826	193.593	202.638	211.962
29	145.061	152.361	159.919	167.735	175.812	184.152	192.756	201.625
30	137.986	144.931	152.119	159.555	167.238	175.170	183.355	191.791
31	131.256	137.862	144.701	151.773	159.082	166.627	174.412	182.437
32	124.855	131.139	137.643	144.371	151.323	158.501	165.906	173.540
33	118.766	124.743	130.930	137.330	143.943	150.771	157.815	165.076
34	112.973	118.659	124.545	130.632	136.923	143.417	150.118	157.025
35	107.464	112.872	118.471	124.261	130.245	136.423	142.797	149.367
36	102.223	107.367	112.693	118.201	123.893	129.769	135.833	142.082
37	97.237	102.131	107.197	112.436	117.851	123.441	129.208	135.153
38	92.495	97.150	101.969	106.953	112.103	117.420	122.906	128.561
39	87.984	92.412	96.996	101.737	106.636	111.694	116.912	122.291
40		87.905	92.265	96.775	101.435	106.246	111.210	116.327
41			87.765	92.055	96.488	101.065	105.786	110.654
42				87.566	91.782	96.136	100.627	105.257
43					87.306	91.447	95.720	100.124
44						86.987	91.051	95.241
45							86.611	90.596
46								86.177
受照年龄(e) 岁	患癌年龄(e+t) 岁							
	47	48	49	50	51	52	53	54
15	424.421	443.364	462.854	235.843	270.909	301.762	324.563	336.820

16	403.722	421.741	440.281	224.340	257.697	287.045	308.733	320.393
17	384.032	401.172	418.808	213.399	245.129	273.046	293.676	304.767
18	365.303	381.607	398.383	202.992	233.174	259.729	279.354	289.903
19	347.487	362.995	378.953	193.092	221.802	247.062	265.729	275.765
20	330.540	345.292	360.471	183.674	210.984	235.013	252.770	262.315
21	314.419	328.452	342.891	174.717	200.695	223.551	240.442	249.522
22	299.085	312.433	326.168	166.196	190.907	212.648	228.715	237.353

表 C.8 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	47	48	49	50	51	52	53	54
23	284.498	297.196	310.261	158.090	181.596	202.277	217.561	225.777
24	270.623	282.701	295.129	150.380	172.739	192.412	206.950	214.766
25	257.425	268.914	280.735	143.046	164.315	183.028	196.857	204.291
26	244.870	255.799	267.044	136.069	156.301	174.102	187.256	194.328
27	232.927	243.323	254.020	129.433	148.678	165.611	178.124	184.851
28	221.567	231.456	241.631	123.121	141.427	157.534	169.436	175.835
29	210.761	220.168	229.847	117.116	134.530	149.851	161.173	167.260
30	200.482	209.430	218.637	111.404	127.969	142.542	153.312	159.102
31	190.705	199.216	207.974	105.971	121.727	135.590	145.835	151.343
32	181.404	189.500	197.831	100.803	115.791	128.978	138.723	143.962
33	172.557	180.258	188.183	95.886	110.144	122.687	131.957	136.941
34	164.141	171.467	179.005	91.210	104.772	116.704	125.522	130.262
35	156.136	163.104	170.275	86.762	99.662	111.012	119.400	123.909
36	148.521	155.150	161.970	82.530	94.801	105.598	113.577	117.866
37	141.278	147.583	154.071	78.505	90.178	100.448	108.037	112.118
38	134.387	140.385	146.557	74.676	85.780	95.549	102.768	106.649
39	127.833	133.539	139.409	71.034	81.596	90.889	97.756	101.448
40	121.599	127.026	132.610	67.570	77.617	86.456	92.989	96.500
41	115.668	120.831	126.143	64.275	73.831	82.240	88.454	91.794
42	110.027	114.938	119.991	61.140	70.231	78.229	84.140	87.317
43	104.661	109.332	114.139	58.158	66.805	74.414	80.036	83.059

44	99.557	104.000	108.572	55.322	63.547	70.784	76.133	79.008
45	94.701	98.928	103.277	52.624	60.448	67.332	72.420	75.155
46	90.083	94.103	98.240	50.057	57.500	64.048	68.888	71.489
47	85.689	89.514	93.449	47.616	54.696	60.925	65.528	68.003
48		85.148	88.891	45.294	52.028	57.953	62.332	64.686
49			84.556	43.085	49.491	55.127	59.292	61.531
50				40.983	47.077	52.438	56.401	58.530
51					44.781	49.881	53.650	55.676
52						47.448	51.033	52.961
53							48.544	50.378
54								47.921

表 C.8 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	55	56	57	58	59	60	61	62
15	338.279	330.718	316.957	299.812	281.511	263.538	246.742	231.516
16	321.781	314.589	301.499	285.190	267.781	250.685	234.708	220.225
17	306.087	299.246	286.795	271.281	254.721	238.459	223.262	209.484
18	291.159	284.652	272.807	258.051	242.298	226.829	212.373	199.267
19	276.959	270.769	259.502	245.465	230.481	215.766	202.015	189.549
20	263.452	257.564	246.846	233.494	219.241	205.243	192.163	180.305
21	250.603	245.002	234.808	222.106	208.548	195.234	182.791	171.511
22	238.381	233.053	223.356	211.274	198.377	185.712	173.876	163.146
23	226.755	221.687	212.463	200.970	188.702	176.655	165.396	155.190
24	215.696	210.875	202.101	191.169	179.499	168.039	157.330	147.621
25	205.176	200.591	192.244	181.845	170.745	159.844	149.657	140.421
26	195.170	190.808	182.868	172.977	162.417	152.048	142.358	133.573
27	185.651	181.502	173.950	164.540	154.496	144.633	135.415	127.058
28	176.597	172.650	165.466	156.516	146.961	137.579	128.811	120.862
29	167.984	164.230	157.396	148.882	139.794	130.869	122.529	114.967
30	159.791	156.220	149.720	141.621	132.976	124.486	116.553	109.360

31	151.998	148.601	142.418	134.714	126.491	118.415	110.868	104.027
32	144.585	141.354	135.472	128.144	120.322	112.640	105.461	98.953
33	137.534	134.460	128.865	121.895	114.454	107.146	100.318	94.127
34	130.826	127.902	122.580	115.950	108.872	101.921	95.425	89.537
35	124.446	121.664	116.602	110.295	103.562	96.950	90.771	85.170
36	118.376	115.731	110.915	104.916	98.511	92.222	86.344	81.016
37	112.603	110.087	105.506	99.799	93.707	87.724	82.133	77.065
38	107.111	104.718	100.360	94.932	89.137	83.446	78.128	73.306
39	101.888	99.610	95.466	90.302	84.789	79.376	74.317	69.731
40	96.918	94.752	90.810	85.898	80.654	75.505	70.693	66.330
41	92.192	90.131	86.381	81.708	76.721	71.822	67.245	63.095
42	87.695	85.736	82.168	77.723	72.979	68.320	63.966	60.018
43	83.418	81.554	78.161	73.933	69.420	64.988	60.846	57.091
44	79.350	77.577	74.349	70.327	66.034	61.818	57.878	54.307
45	75.480	73.793	70.723	66.897	62.813	58.803	55.056	51.658
46	71.799	70.194	67.273	63.635	59.750	55.935	52.371	49.139

表 C.8 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	55	56	57	58	59	60	61	62
47	68.297	66.771	63.993	60.531	56.836	53.207	49.816	46.742
48	64.966	63.514	60.872	57.579	54.064	50.612	47.387	44.463
49	61.798	60.417	57.903	54.771	51.427	48.144	45.076	42.294
50	58.784	57.470	55.079	52.100	48.919	45.796	42.877	40.231
51	55.917	54.667	52.393	49.559	46.533	43.562	40.786	38.269
52	53.190	52.001	49.837	47.142	44.264	41.438	38.797	36.403
53	50.596	49.465	47.407	44.842	42.105	39.417	36.905	34.627
54	48.128	47.053	45.095	42.655	40.052	37.495	35.105	32.939
55	45.781	44.758	42.895	40.575	38.098	35.666	33.393	31.332
56		42.575	40.803	38.596	36.240	33.927	31.764	29.804
57			38.813	36.714	34.473	32.272	30.215	28.351
58				34.923	32.792	30.698	28.742	26.968

59					31.192	29.201	27.340	25.653
60+						27.777	26.006	24.402
受照年龄(e) 岁	患癌年龄(e+t) 岁							
	63	64	65	66	67	68	69	70
15	217.986	206.102	195.735	186.764	178.984	172.269	166.452	161.425
16	207.354	196.050	186.189	177.655	170.255	163.867	158.334	153.552
17	197.241	186.489	177.109	168.991	161.952	155.875	150.612	146.063
18	187.622	177.394	168.471	160.749	154.053	148.273	143.267	138.940
19	178.471	168.742	160.255	152.909	146.540	141.042	136.280	132.163
20	169.767	160.512	152.439	145.452	139.393	134.163	129.633	125.718
21	161.488	152.684	145.004	138.358	132.595	127.620	123.311	119.586
22	153.612	145.238	137.932	131.610	126.128	121.396	117.297	113.754
23	146.120	138.154	131.205	125.191	119.977	115.475	111.576	108.206
24	138.994	131.416	124.806	119.086	114.125	109.843	106.135	102.929
25	132.215	125.007	118.719	113.278	108.559	104.486	100.958	97.909
26	125.767	118.910	112.929	107.753	103.265	99.390	96.035	93.134
27	119.633	113.111	107.422	102.498	98.229	94.543	91.351	88.592
28	113.798	107.595	102.183	97.499	93.438	89.932	86.896	84.271
29	108.248	102.347	97.199	92.744	88.881	85.546	82.658	80.161
30	102.969	97.356	92.459	88.221	84.546	81.374	78.627	76.252

表 C.8 （续）

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	63	64	65	66	67	68	69	70
31	97.947	92.608	87.950	83.918	80.423	77.405	74.792	72.533
32	93.170	88.091	83.660	79.826	76.501	73.630	71.144	68.995
33	88.626	83.795	79.580	75.932	72.770	70.039	67.674	65.630
34	84.304	79.708	75.699	72.229	69.221	66.623	64.374	62.430
35	80.192	75.821	72.007	68.706	65.845	63.374	61.234	59.385
36	76.281	72.123	68.495	65.356	62.633	60.283	58.248	56.489
37	72.561	68.605	65.155	62.168	59.579	57.343	55.407	53.734

38	69.022	65.259	61.977	59.136	56.673	54.547	52.705	51.113
39	65.656	62.077	58.954	56.252	53.909	51.886	50.134	48.620
40	62.454	59.049	56.079	53.509	51.280	49.356	47.689	46.249
41	59.408	56.169	53.344	50.899	48.779	46.949	45.364	43.993
42	56.511	53.430	50.742	48.417	46.400	44.659	43.151	41.848
43	53.755	50.824	48.268	46.055	44.137	42.481	41.047	39.807
44	51.133	48.345	45.914	43.809	41.984	40.409	39.045	37.865
45	48.639	45.988	43.674	41.673	39.937	38.438	37.141	36.019
46	46.267	43.745	41.544	39.640	37.989	36.564	35.329	34.262
47	44.011	41.611	39.518	37.707	36.136	34.780	33.606	32.591
48	41.864	39.582	37.591	35.868	34.374	33.084	31.967	31.002
49	39.822	37.651	35.758	34.119	32.697	31.471	30.408	29.490
50	37.880	35.815	34.014	32.455	31.103	29.936	28.925	28.051
51	36.033	34.068	32.355	30.872	29.586	28.476	27.514	26.683
52	34.275	32.407	30.777	29.366	28.143	27.087	26.172	25.382
53	32.604	30.826	29.276	27.934	26.770	25.766	24.896	24.144
54	31.014	29.323	27.848	26.572	25.465	24.509	23.682	22.967
55	29.501	27.893	26.490	25.276	24.223	23.314	22.527	21.846
56	28.062	26.533	25.198	24.043	23.042	22.177	21.428	20.781
57	26.694	25.239	23.969	22.870	21.918	21.095	20.383	19.767
58	25.392	24.008	22.800	21.755	20.849	20.067	19.389	18.803
59	24.153	22.837	21.688	20.694	19.832	19.088	18.443	17.886
60+	22.976	21.723	20.630	19.685	18.865	18.157	17.544	17.014

表 C.8 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	71	72	73	74	75	76	77	78
15	157.049	153.241	149.886	146.918	144.254	141.831	139.582	137.474
16	149.390	145.767	142.576	139.753	137.219	134.914	132.775	130.769
17	142.104	138.658	135.622	132.937	130.526	128.334	126.299	124.392

18	135.174	131.896	129.008	126.453	124.161	122.075	120.140	118.325
19	128.581	125.463	122.716	120.286	118.105	116.122	114.280	112.554
20	122.310	119.344	116.731	114.420	112.345	110.458	108.707	107.065
21	116.345	113.524	111.038	108.839	106.866	105.071	103.405	101.843
22	110.671	107.987	105.623	103.531	101.654	99.947	98.362	96.876
23	105.273	102.720	100.471	98.482	96.696	95.072	93.565	92.152
24	100.139	97.711	95.571	93.679	91.980	90.436	89.002	87.657
25	95.255	92.945	90.910	89.110	87.495	86.025	84.661	83.382
26	90.610	88.412	86.476	84.764	83.227	81.829	80.532	79.316
27	86.191	84.100	82.259	80.630	79.168	77.839	76.604	75.447
28	81.987	79.999	78.247	76.698	75.307	74.042	72.868	71.768
29	77.988	76.097	74.431	72.957	71.634	70.431	69.315	68.268
30	74.185	72.386	70.801	69.399	68.141	66.996	65.934	64.938
31	70.567	68.855	67.348	66.014	64.818	63.729	62.718	61.771
32	67.125	65.497	64.063	62.795	61.656	60.621	59.660	58.758
33	63.852	62.303	60.939	59.732	58.649	57.664	56.750	55.893
34	60.737	59.264	57.967	56.819	55.789	54.852	53.982	53.167
35	57.775	56.374	55.140	54.048	53.068	52.177	51.349	50.574
36	54.958	53.625	52.451	51.412	50.480	49.632	48.845	48.107
37	52.277	51.009	49.893	48.905	48.018	47.211	46.463	45.761
38	49.728	48.522	47.459	46.520	45.676	44.909	44.197	43.529
39	47.302	46.155	45.145	44.251	43.448	42.719	42.041	41.406
40	44.995	43.904	42.943	42.093	41.329	40.635	39.991	39.387
41	42.801	41.763	40.849	40.040	39.314	38.654	38.041	37.466
42	40.714	39.726	38.856	38.087	37.396	36.768	36.185	35.639
43	38.728	37.789	36.961	36.229	35.573	34.975	34.421	33.901
44	36.839	35.946	35.159	34.463	33.838	33.269	32.742	32.247
45	35.042	34.193	33.444	32.782	32.187	31.647	31.145	30.675
46	33.333	32.525	31.813	31.183	30.618	30.103	29.626	29.179

表 C.8 （续）

受照年龄(e)	患癌年龄($e+t$)
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岁	岁							
	71	72	73	74	75	76	77	78
47	31.708	30.939	30.261	29.662	29.124	28.635	28.181	27.756
48	30.161	29.430	28.786	28.216	27.704	27.239	26.807	26.402
49	28.690	27.995	27.382	26.839	26.353	25.910	25.499	25.114
50	27.291	26.629	26.046	25.530	25.068	24.647	24.256	23.889
51	25.960	25.331	24.776	24.285	23.845	23.445	23.073	22.724
52	24.694	24.095	23.568	23.101	22.682	22.301	21.948	21.616
53	23.490	22.920	22.418	21.974	21.576	21.213	20.877	20.562
54	22.344	21.802	21.325	20.903	20.524	20.179	19.859	19.559
55	21.254	20.739	20.285	19.883	19.523	19.195	18.890	18.605
56	20.218	19.727	19.296	18.913	18.571	18.259	17.969	17.698
57	19.232	18.765	18.354	17.991	17.665	17.368	17.093	16.835
58	18.294	17.850	17.459	17.114	16.803	16.521	16.259	16.014
59	17.402	16.980	16.608	16.279	15.984	15.715	15.466	15.233
60	16.553	16.151	15.798	15.485	15.204	14.949	14.712	14.490
受照年龄(e) 岁	患癌年龄(e+t) 岁							
	79	80	81	82	83	84		
15	135.443	133.472	131.515	129.573	127.613	125.656		
16	128.837	126.963	125.101	123.254	121.390	119.528		
17	122.553	120.771	119.000	117.242	115.469	113.699		
18	116.576	114.881	113.196	111.524	109.838	108.153		
19	110.891	109.278	107.676	106.085	104.481	102.879		
20	105.483	103.948	102.424	100.911	99.385	97.861		
21	100.338	98.879	97.429	95.990	94.538	93.089		
22	95.445	94.056	92.677	91.308	89.928	88.549		
23	90.790	89.469	88.157	86.855	85.542	84.230		
24	86.362	85.106	83.858	82.619	81.370	80.122		
25	82.150	80.955	79.768	78.590	77.401	76.214		
26	78.144	77.007	75.878	74.757	73.627	72.497		
27	74.332	73.251	72.177	71.111	70.036	68.962		
28	70.707	69.679	68.657	67.643	66.620	65.598		
29	67.259	66.280	65.309	64.344	63.371	62.399		

30	63.979	63.048	62.123	61.206	60.280	59.356
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表 C.8 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁					
	79	80	81	82	83	84+
31	60.858	59.973	59.094	58.221	57.340	56.461
32	57.890	57.048	56.212	55.381	54.544	53.707
33	55.067	54.266	53.470	52.680	51.884	51.088
34	52.381	51.619	50.862	50.111	49.353	48.596
35	49.827	49.102	48.382	47.667	46.946	46.226
36	47.396	46.707	46.022	45.342	44.657	43.972
37	45.085	44.429	43.778	43.131	42.479	41.827
38	42.886	42.262	41.643	41.028	40.407	39.787
39	40.795	40.201	39.612	39.027	38.436	37.847
40	38.805	38.240	37.680	37.123	36.562	36.001
41	36.912	36.375	35.842	35.313	34.779	34.245
42	35.112	34.601	34.094	33.591	33.083	32.575
43	33.400	32.914	32.431	31.952	31.469	30.986
44	31.771	31.309	30.850	30.394	29.934	29.475
45	30.221	29.782	29.345	28.912	28.474	28.038
46	28.747	28.329	27.914	27.502	27.086	26.670
47	27.345	26.948	26.553	26.160	25.765	25.370
48	26.012	25.633	25.258	24.884	24.508	24.132
49	24.743	24.383	24.026	23.671	23.313	22.955
50	23.536	23.194	22.854	22.516	22.176	21.836
51	22.388	22.063	21.739	21.418	21.094	20.771
52	21.297	20.987	20.679	20.374	20.066	19.758
53	20.258	19.963	19.671	19.380	19.087	18.794
54	19.270	18.990	18.711	18.435	18.156	17.878
55	18.330	18.064	17.799	17.536	17.271	17.006
56	17.436	17.183	16.931	16.681	16.428	16.176

57	16.586	16.345	16.105	15.867	15.627	15.387
58	15.777	15.547	15.319	15.093	14.865	14.637
59	15.007	14.789	14.572	14.357	14.140	13.923
60+	14.276	14.068	13.862	13.657	13.450	13.244

C.3 女性实体瘤超额危险系数（乳腺癌和甲状腺癌除外）

女性几种实体瘤的危险系数值见表C.9~表C.14。

表C.9 女性胃癌 ERR_{16t} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	59.770	10.096	4.973	4.115	3.684	3.401	3.194	3.036	2.912	2.817	2.741	2.683
16	—	9.725	4.811	3.982	3.566	3.290	3.091	2.937	2.818	2.724	2.651	2.594
17	—	—	4.644	3.851	3.449	3.184	2.991	2.841	2.725	2.634	2.562	2.507
18	—	—	—	3.723	3.335	3.081	2.894	2.749	2.636	2.546	2.478	2.423
19	—	—	—	—	3.227	2.981	2.799	2.658	2.550	2.462	2.395	2.342
20	—	—	—	—	—	2.885	2.709	2.573	2.466	2.382	2.315	2.264
21	—	—	—	—	—	—	2.621	2.489	2.386	2.304	2.239	2.189
22	—	—	—	—	—	—	—	2.408	2.307	2.228	2.165	2.116
23	—	—	—	—	—	—	—	—	2.233	2.155	2.094	2.045
24	—	—	—	—	—	—	—	—	—	2.085	2.025	1.978
25	—	—	—	—	—	—	—	—	—	—	1.957	1.912
26	—	—	—	—	—	—	—	—	—	—	—	1.848

表C.9 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	2.640	2.608	2.584	2.565	2.550	2.534	2.514	2.491	2.460	2.421	2.374	2.319
16	2.551	2.519	2.496	2.477	2.461	2.446	2.427	2.403	2.373	2.336	2.289	2.236
17	2.465	2.433	2.410	2.392	2.376	2.360	2.342	2.319	2.289	2.253	2.208	2.157
18	2.382	2.352	2.328	2.310	2.294	2.279	2.260	2.238	2.209	2.173	2.130	2.080
19	2.302	2.272	2.249	2.231	2.215	2.199	2.181	2.159	2.131	2.096	2.055	2.006
20	2.225	2.195	2.172	2.154	2.138	2.122	2.104	2.083	2.055	2.022	1.982	1.935
21	2.150	2.121	2.098	2.080	2.064	2.049	2.032	2.011	1.983	1.951	1.912	1.867
22	2.078	2.049	2.027	2.009	1.994	1.978	1.960	1.940	1.914	1.882	1.844	1.800
23	2.008	1.980	1.958	1.940	1.925	1.910	1.893	1.872	1.846	1.816	1.778	1.736
24	1.941	1.913	1.891	1.874	1.859	1.844	1.826	1.806	1.781	1.752	1.716	1.675
25	1.876	1.849	1.827	1.810	1.795	1.780	1.763	1.743	1.719	1.690	1.655	1.616
26	1.813	1.786	1.766	1.748	1.733	1.718	1.702	1.683	1.659	1.630	1.597	1.559
27	1.752	1.727	1.706	1.689	1.673	1.658	1.643	1.624	1.601	1.574	1.540	1.504
28	—	1.668	1.648	1.631	1.616	1.602	1.585	1.567	1.545	1.518	1.487	1.451
29	—	—	1.593	1.575	1.561	1.547	1.530	1.512	1.491	1.464	1.434	1.400
30+	—	—	—	1.522	1.507	1.493	1.478	1.460	1.439	1.413	1.384	1.351

表C.9 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	2.257	2.189	2.118	2.044	1.969	1.894	1.821	1.750	1.682	1.617	1.555	1.497
16	2.176	2.111	2.042	1.971	1.899	1.827	1.756	1.688	1.622	1.559	1.500	1.444
17	2.099	2.036	1.969	1.901	1.831	1.762	1.694	1.628	1.565	1.504	1.447	1.392
18	2.025	1.964	1.899	1.833	1.766	1.699	1.634	1.570	1.509	1.451	1.396	1.343
19	1.952	1.894	1.832	1.768	1.703	1.639	1.576	1.515	1.456	1.399	1.347	1.296
20	1.883	1.826	1.766	1.705	1.643	1.580	1.520	1.461	1.404	1.351	1.299	1.250
21	1.816	1.761	1.704	1.645	1.584	1.525	1.466	1.409	1.355	1.302	1.253	1.207
22	1.751	1.699	1.643	1.586	1.528	1.470	1.414	1.359	1.307	1.257	1.209	1.164
23	1.689	1.639	1.585	1.530	1.474	1.418	1.364	1.311	1.261	1.212	1.166	1.123
24	1.630	1.581	1.529	1.476	1.422	1.368	1.316	1.265	1.216	1.169	1.125	1.084
25	1.572	1.525	1.474	1.424	1.372	1.320	1.269	1.220	1.173	1.128	1.086	1.046
26	1.516	1.471	1.422	1.373	1.323	1.273	1.225	1.177	1.132	1.089	1.048	1.009
27	1.463	1.419	1.372	1.324	1.276	1.228	1.182	1.136	1.092	1.051	1.011	0.974
28	1.412	1.368	1.324	1.278	1.232	1.185	1.140	1.096	1.054	1.014	0.976	0.940
29	1.361	1.320	1.277	1.233	1.188	1.144	1.100	1.057	1.017	0.978	0.942	0.906
30+	1.313	1.274	1.232	1.189	1.146	1.103	1.061	1.020	0.981	0.944	0.908	0.875

表C.9 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	1.441	1.390	1.342	1.296	1.253	1.214	1.177	1.142	1.111	1.080	1.053	1.026
16	1.390	1.341	1.294	1.251	1.209	1.172	1.136	1.103	1.072	1.043	1.016	0.991
17	1.341	1.293	1.248	1.207	1.167	1.131	1.096	1.064	1.034	1.006	0.980	0.956
18	1.294	1.248	1.204	1.164	1.126	1.091	1.058	1.026	0.998	0.971	0.946	0.922
19	1.248	1.204	1.162	1.123	1.087	1.052	1.020	0.991	0.963	0.937	0.913	0.890
20	1.204	1.162	1.122	1.084	1.049	1.016	0.985	0.956	0.929	0.904	0.881	0.859
21	1.162	1.121	1.082	1.046	1.012	0.981	0.951	0.923	0.897	0.873	0.850	0.830
22	1.121	1.082	1.044	1.009	0.976	0.946	0.918	0.891	0.866	0.842	0.821	0.801
23	1.082	1.044	1.007	0.974	0.943	0.913	0.885	0.860	0.835	0.813	0.792	0.773
24	1.044	1.007	0.973	0.940	0.910	0.881	0.854	0.830	0.806	0.785	0.765	0.746
25	1.008	0.972	0.938	0.907	0.878	0.850	0.825	0.801	0.779	0.758	0.738	0.720
26	0.972	0.938	0.906	0.875	0.847	0.821	0.796	0.773	0.751	0.731	0.713	0.695
27	0.938	0.905	0.874	0.845	0.818	0.792	0.768	0.746	0.726	0.706	0.688	0.671
28	0.906	0.874	0.843	0.816	0.790	0.765	0.742	0.720	0.700	0.682	0.664	0.648
29	0.874	0.843	0.814	0.787	0.762	0.738	0.716	0.696	0.676	0.658	0.641	0.625
30+	0.844	0.813	0.786	0.760	0.735	0.713	0.691	0.671	0.652	0.635	0.619	0.603

表C.9 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	1.002	0.979	0.958	0.939	0.920	0.904	0.888	0.874	0.861	0.849	0.839	0.829
16	0.967	0.945	0.925	0.906	0.888	0.872	0.857	0.844	0.831	0.819	0.809	0.800
17	0.933	0.912	0.892	0.874	0.857	0.842	0.827	0.814	0.802	0.791	0.781	0.772
18	0.901	0.880	0.861	0.844	0.828	0.812	0.798	0.785	0.774	0.763	0.754	0.745
19	0.869	0.849	0.831	0.814	0.798	0.784	0.770	0.758	0.746	0.736	0.727	0.719
20	0.839	0.820	0.802	0.786	0.770	0.757	0.744	0.731	0.721	0.711	0.701	0.694
21	0.809	0.791	0.774	0.758	0.744	0.730	0.718	0.706	0.696	0.686	0.677	0.669
22	0.782	0.763	0.748	0.732	0.718	0.705	0.693	0.682	0.671	0.662	0.654	0.646
23	0.754	0.737	0.721	0.707	0.693	0.680	0.669	0.658	0.648	0.639	0.631	0.623
24	0.728	0.712	0.697	0.682	0.669	0.656	0.646	0.635	0.625	0.616	0.609	0.601
25	0.703	0.687	0.673	0.658	0.646	0.634	0.623	0.612	0.604	0.595	0.588	0.581
26	0.678	0.663	0.649	0.636	0.623	0.612	0.601	0.591	0.583	0.574	0.567	0.561
27	0.655	0.640	0.627	0.614	0.602	0.591	0.580	0.571	0.562	0.555	0.547	0.541
28	0.632	0.618	0.605	0.592	0.581	0.570	0.560	0.551	0.543	0.535	0.528	0.522
29	0.610	0.597	0.584	0.572	0.561	0.550	0.541	0.532	0.524	0.516	0.510	0.504
30+	0.589	0.576	0.564	0.552	0.541	0.532	0.522	0.514	0.506	0.499	0.492	0.486

表C.9 (续)

受照年龄(<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.821	0.814	0.808	0.803	0.800	0.798	0.798	0.798	0.801	0.806
16	0.792	0.785	0.779	0.775	0.772	0.769	0.769	0.770	0.772	0.777
17	0.764	0.757	0.752	0.747	0.744	0.742	0.742	0.743	0.745	0.749
18	0.737	0.731	0.725	0.721	0.718	0.716	0.715	0.716	0.718	0.722
19	0.712	0.705	0.700	0.695	0.692	0.690	0.690	0.690	0.693	0.696
20	0.686	0.680	0.675	0.671	0.668	0.666	0.666	0.666	0.668	0.672
21	0.662	0.657	0.651	0.647	0.645	0.642	0.642	0.642	0.644	0.648
22	0.639	0.633	0.628	0.625	0.622	0.620	0.619	0.620	0.621	0.624
23	0.617	0.611	0.607	0.603	0.600	0.598	0.597	0.597	0.599	0.602
24	0.595	0.590	0.585	0.582	0.579	0.577	0.576	0.576	0.578	0.581
25	0.574	0.570	0.565	0.561	0.558	0.557	0.556	0.556	0.557	0.560
26	0.554	0.550	0.545	0.542	0.539	0.537	0.537	0.536	0.538	0.540
27	0.535	0.530	0.526	0.523	0.520	0.518	0.517	0.517	0.518	0.521
28	0.517	0.512	0.507	0.504	0.502	0.500	0.499	0.499	0.501	0.502
29	0.499	0.494	0.490	0.487	0.484	0.483	0.482	0.481	0.483	0.485
30+	0.481	0.477	0.473	0.469	0.468	0.466	0.464	0.465	0.466	0.468

表C.10 女性结肠癌 ERR_{16Y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	21.588	4.905	3.496	3.072	2.804	2.610	2.454	2.325	2.222	2.135	2.068	2.015
16	—	4.738	3.381	2.976	2.720	2.527	2.376	2.252	2.151	2.068	2.002	1.949
17	—	—	3.276	2.882	2.633	2.449	2.301	2.181	2.083	2.004	1.938	1.887
18	—	—	—	2.790	2.552	2.373	2.229	2.114	2.018	1.939	1.877	1.827
19	—	—	—	—	2.470	2.299	2.161	2.047	1.954	1.878	1.815	1.769
20	—	—	—	—	—	2.226	2.094	1.983	1.894	1.818	1.759	1.712
21	—	—	—	—	—	—	2.026	1.920	1.833	1.762	1.702	1.657
22	—	—	—	—	—	—	—	1.861	1.777	1.706	1.648	1.604
23	—	—	—	—	—	—	—	—	1.719	1.652	1.597	1.552
24	—	—	—	—	—	—	—	—	—	1.599	1.545	1.503
25	—	—	—	—	—	—	—	—	—	—	1.496	1.455
26	—	—	—	—	—	—	—	—	—	—	—	1.407

表C. 10 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	1.975	1.947	1.931	1.926	1.927	1.933	1.941	1.947	1.948	1.940	1.919	1.887
16	1.912	1.884	1.868	1.861	1.862	1.868	1.875	1.880	1.881	1.873	1.853	1.821
17	1.848	1.823	1.807	1.798	1.799	1.804	1.810	1.816	1.816	1.806	1.788	1.757
18	1.790	1.763	1.748	1.740	1.739	1.742	1.749	1.752	1.753	1.744	1.726	1.694
19	1.732	1.705	1.689	1.682	1.680	1.684	1.689	1.693	1.692	1.684	1.665	1.636
20	1.676	1.649	1.634	1.626	1.623	1.627	1.631	1.634	1.633	1.625	1.607	1.578
21	1.621	1.596	1.580	1.572	1.570	1.572	1.576	1.579	1.578	1.569	1.551	1.523
22	1.568	1.545	1.528	1.520	1.518	1.519	1.521	1.525	1.523	1.514	1.497	1.469
23	1.518	1.494	1.477	1.469	1.467	1.468	1.471	1.473	1.469	1.462	1.445	1.418
24	1.470	1.445	1.430	1.421	1.418	1.418	1.421	1.421	1.419	1.412	1.395	1.370
25	1.422	1.398	1.382	1.373	1.370	1.371	1.372	1.373	1.371	1.362	1.345	1.322
26	1.377	1.353	1.337	1.329	1.325	1.324	1.325	1.326	1.324	1.315	1.299	1.275
27	1.331	1.309	1.293	1.285	1.281	1.279	1.281	1.281	1.278	1.270	1.254	1.231
28	—	1.267	1.252	1.242	1.237	1.237	1.238	1.237	1.234	1.225	1.211	1.187
29	—	—	1.211	1.200	1.196	1.196	1.196	1.195	1.192	1.184	1.169	1.147
30+	—	—	—	1.162	1.157	1.155	1.155	1.154	1.151	1.143	1.128	1.106

表C. 10 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	1.841	1.784	1.717	1.646	1.572	1.499	1.426	1.356	1.291	1.230	1.172	1.119
16	1.775	1.721	1.657	1.588	1.517	1.446	1.376	1.309	1.246	1.187	1.132	1.081
17	1.713	1.660	1.599	1.532	1.465	1.395	1.328	1.264	1.203	1.146	1.092	1.043
18	1.653	1.602	1.542	1.479	1.414	1.346	1.282	1.220	1.162	1.106	1.055	1.008
19	1.595	1.545	1.488	1.427	1.364	1.300	1.237	1.178	1.121	1.068	1.019	0.973
20	1.540	1.492	1.436	1.377	1.316	1.255	1.194	1.137	1.082	1.031	0.984	0.940
21	1.486	1.440	1.386	1.329	1.269	1.211	1.153	1.097	1.045	0.996	0.950	0.908
22	1.433	1.389	1.338	1.283	1.225	1.169	1.113	1.060	1.009	0.961	0.918	0.877
23	1.383	1.340	1.291	1.237	1.183	1.128	1.075	1.023	0.974	0.928	0.886	0.847
24	1.335	1.293	1.246	1.194	1.142	1.089	1.037	0.987	0.941	0.897	0.856	0.818
25	1.288	1.247	1.202	1.152	1.102	1.051	1.001	0.953	0.908	0.866	0.826	0.790
26	1.243	1.204	1.160	1.112	1.064	1.014	0.966	0.920	0.876	0.836	0.798	0.763
27	1.200	1.162	1.120	1.074	1.026	0.979	0.933	0.889	0.846	0.807	0.771	0.737
28	1.158	1.121	1.081	1.036	0.991	0.945	0.901	0.858	0.818	0.780	0.744	0.711
29	1.118	1.083	1.043	1.000	0.956	0.912	0.870	0.828	0.790	0.753	0.719	0.688
30+	1.079	1.045	1.007	0.965	0.924	0.881	0.839	0.800	0.762	0.728	0.694	0.664

表C.10 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	1.070	1.025	0.983	0.945	0.909	0.877	0.846	0.818	0.792	0.767	0.745	0.724
16	1.034	0.990	0.950	0.912	0.878	0.847	0.817	0.790	0.765	0.742	0.720	0.700
17	0.998	0.956	0.917	0.882	0.848	0.818	0.790	0.764	0.739	0.717	0.696	0.677
18	0.964	0.923	0.886	0.851	0.820	0.790	0.763	0.738	0.715	0.693	0.673	0.654
19	0.931	0.892	0.856	0.823	0.792	0.764	0.738	0.713	0.690	0.670	0.650	0.632
20	0.899	0.861	0.827	0.795	0.766	0.738	0.713	0.689	0.667	0.647	0.628	0.611
21	0.868	0.832	0.799	0.768	0.739	0.713	0.688	0.666	0.645	0.625	0.607	0.590
22	0.838	0.804	0.771	0.742	0.714	0.689	0.665	0.644	0.624	0.605	0.587	0.571
23	0.810	0.776	0.745	0.717	0.690	0.666	0.643	0.622	0.602	0.584	0.567	0.552
24	0.782	0.750	0.720	0.693	0.667	0.643	0.621	0.601	0.582	0.565	0.548	0.533
25	0.756	0.724	0.696	0.669	0.644	0.622	0.601	0.581	0.563	0.546	0.530	0.515
26	0.730	0.700	0.672	0.647	0.623	0.601	0.581	0.561	0.544	0.528	0.513	0.498
27	0.706	0.676	0.650	0.625	0.602	0.581	0.561	0.543	0.526	0.510	0.496	0.481
28	0.681	0.653	0.627	0.604	0.582	0.561	0.543	0.525	0.508	0.493	0.479	0.466
29	0.658	0.631	0.606	0.584	0.562	0.542	0.524	0.507	0.492	0.477	0.463	0.450
30+	0.636	0.610	0.586	0.564	0.543	0.525	0.507	0.490	0.475	0.461	0.448	0.436

表C.10 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.705	0.686	0.670	0.654	0.639	0.625	0.612	0.599	0.589	0.578	0.568	0.559
16	0.681	0.664	0.647	0.632	0.618	0.604	0.591	0.579	0.569	0.559	0.549	0.540
17	0.658	0.641	0.626	0.611	0.597	0.584	0.572	0.560	0.550	0.540	0.531	0.523
18	0.637	0.620	0.605	0.590	0.577	0.564	0.553	0.542	0.531	0.522	0.513	0.505
19	0.615	0.599	0.585	0.570	0.557	0.546	0.534	0.524	0.514	0.504	0.496	0.488
20	0.594	0.579	0.565	0.552	0.539	0.527	0.516	0.506	0.497	0.488	0.479	0.472
21	0.575	0.560	0.546	0.533	0.521	0.510	0.499	0.489	0.480	0.471	0.463	0.456
22	0.556	0.541	0.528	0.515	0.503	0.493	0.482	0.473	0.464	0.455	0.448	0.441
23	0.537	0.523	0.510	0.498	0.487	0.476	0.466	0.458	0.449	0.441	0.433	0.426
24	0.519	0.506	0.493	0.481	0.471	0.461	0.451	0.442	0.434	0.426	0.419	0.412
25	0.502	0.489	0.477	0.466	0.455	0.445	0.436	0.428	0.420	0.412	0.405	0.398
26	0.485	0.473	0.461	0.450	0.440	0.431	0.422	0.413	0.405	0.398	0.391	0.385
27	0.469	0.457	0.446	0.435	0.425	0.416	0.408	0.399	0.392	0.385	0.379	0.372
28	0.453	0.442	0.431	0.421	0.411	0.402	0.394	0.386	0.379	0.372	0.366	0.360
29	0.438	0.427	0.417	0.407	0.398	0.389	0.381	0.373	0.366	0.360	0.354	0.348
30+	0.424	0.413	0.403	0.393	0.384	0.376	0.369	0.362	0.354	0.348	0.342	0.337

表C.10 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.550	0.543	0.536	0.529	0.524	0.519	0.514	0.510	0.507	0.505
16	0.532	0.525	0.518	0.511	0.506	0.501	0.497	0.493	0.491	0.488
17	0.515	0.507	0.501	0.495	0.489	0.485	0.480	0.476	0.474	0.472
18	0.497	0.490	0.484	0.478	0.472	0.468	0.464	0.460	0.457	0.456
19	0.481	0.474	0.468	0.462	0.457	0.452	0.448	0.445	0.442	0.440
20	0.465	0.458	0.452	0.446	0.441	0.437	0.433	0.430	0.428	0.425
21	0.449	0.443	0.437	0.431	0.426	0.423	0.419	0.416	0.413	0.411
22	0.434	0.428	0.422	0.417	0.412	0.408	0.404	0.401	0.399	0.397
23	0.419	0.414	0.408	0.403	0.399	0.395	0.391	0.388	0.386	0.383
24	0.406	0.400	0.394	0.390	0.385	0.381	0.378	0.375	0.373	0.370
25	0.392	0.387	0.381	0.377	0.372	0.369	0.365	0.363	0.360	0.358
26	0.379	0.373	0.369	0.364	0.360	0.356	0.353	0.350	0.348	0.346
27	0.366	0.361	0.356	0.352	0.348	0.345	0.341	0.339	0.336	0.335
28	0.354	0.349	0.344	0.340	0.337	0.333	0.330	0.327	0.325	0.323
29	0.342	0.337	0.333	0.329	0.325	0.322	0.319	0.316	0.314	0.313
30+	0.331	0.327	0.322	0.318	0.315	0.311	0.308	0.306	0.303	0.301

表C.11 女性肝癌 ERR_{16Y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	2.61	2.453	2.353	2.25	2.221	2.181	2.209	2.25	2.327	2.405	1.790	1.553
16	—	2.387	2.266	2.194	2.142	2.132	2.137	2.18	2.259	2.315	1.731	1.506
17	—	—	2.207	2.112	2.064	2.058	2.066	2.112	2.166	2.252	1.674	1.453
18	—	—	—	2.06	2.015	1.985	1.996	2.045	2.102	2.164	1.617	1.407
19	—	—	—	—	1.941	1.914	1.927	1.978	2.038	2.103	1.561	1.362
20	—	—	—	—	—	1.871	1.86	1.914	1.976	2.017	1.518	1.319
21	—	—	—	—	—	—	1.822	1.85	1.887	1.958	1.465	1.276
22	—	—	—	—	—	—	—	1.787	1.826	1.874	1.412	1.234
23	—	—	—	—	—	—	—	—	1.767	1.817	1.372	1.193
24	—	—	—	—	—	—	—	—	—	1.761	1.321	1.152
25	—	—	—	—	—	—	—	—	—	—	1.282	1.120
26	—	—	—	—	—	—	—	—	—	—	—	1.081

表C.11 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	1.412	1.310	1.232	1.166	1.109	1.061	1.017	0.979	0.943	0.911	0.882	0.854
16	1.366	1.269	1.192	1.129	1.074	1.027	0.985	0.948	0.914	0.883	0.854	0.828
17	1.325	1.229	1.153	1.092	1.041	0.994	0.954	0.918	0.884	0.854	0.827	0.801
18	1.281	1.190	1.117	1.057	1.007	0.963	0.924	0.888	0.856	0.827	0.800	0.775
19	1.237	1.152	1.083	1.026	0.976	0.932	0.894	0.860	0.829	0.801	0.775	0.751
20	1.199	1.114	1.046	0.993	0.946	0.902	0.867	0.833	0.803	0.776	0.751	0.728
21	1.162	1.081	1.014	0.960	0.914	0.875	0.839	0.806	0.778	0.751	0.726	0.704
22	1.126	1.045	0.981	0.931	0.886	0.846	0.812	0.781	0.752	0.727	0.703	0.681
23	1.086	1.013	0.952	0.902	0.858	0.820	0.787	0.756	0.729	0.704	0.682	0.660
24	1.052	0.979	0.921	0.874	0.831	0.794	0.762	0.733	0.706	0.681	0.660	0.639
25	1.018	0.949	0.891	0.846	0.805	0.769	0.738	0.710	0.684	0.660	0.639	0.619
26	0.989	0.920	0.864	0.819	0.780	0.746	0.715	0.687	0.662	0.640	0.618	0.599
27	0.957	0.891	0.836	0.793	0.754	0.722	0.692	0.665	0.641	0.619	0.599	0.580
28	—	0.863	0.810	0.767	0.730	0.698	0.671	0.645	0.621	0.600	0.581	0.562
29	—	—	0.785	0.744	0.707	0.677	0.650	0.623	0.601	0.580	0.562	0.544
30+	—	—	—	0.719	0.687	0.656	0.628	0.604	0.583	0.562	0.544	0.527

表C.11 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	0.829	0.806	0.784	0.764	0.745	0.727	0.709	0.693	0.677	0.662	0.647	0.634
16	0.803	0.781	0.760	0.739	0.720	0.703	0.687	0.670	0.655	0.641	0.627	0.614
17	0.777	0.756	0.735	0.716	0.697	0.681	0.664	0.649	0.634	0.620	0.607	0.593
18	0.753	0.731	0.712	0.693	0.675	0.659	0.643	0.627	0.614	0.600	0.587	0.574
19	0.729	0.708	0.689	0.670	0.654	0.637	0.622	0.608	0.594	0.580	0.568	0.556
20	0.706	0.686	0.666	0.649	0.633	0.617	0.602	0.588	0.574	0.561	0.550	0.538
21	0.683	0.663	0.645	0.628	0.612	0.597	0.583	0.569	0.556	0.543	0.532	0.520
22	0.661	0.643	0.624	0.608	0.593	0.578	0.564	0.550	0.538	0.526	0.514	0.503
23	0.641	0.622	0.605	0.589	0.573	0.559	0.546	0.533	0.521	0.509	0.497	0.487
24	0.620	0.602	0.585	0.570	0.555	0.541	0.528	0.516	0.504	0.493	0.482	0.471
25	0.601	0.583	0.567	0.552	0.538	0.524	0.511	0.499	0.487	0.476	0.466	0.456
26	0.581	0.564	0.549	0.534	0.520	0.507	0.495	0.483	0.472	0.461	0.451	0.441
27	0.563	0.547	0.531	0.517	0.504	0.491	0.479	0.467	0.457	0.447	0.436	0.427
28	0.545	0.529	0.514	0.500	0.488	0.475	0.463	0.453	0.442	0.432	0.422	0.413
29	0.528	0.513	0.498	0.484	0.472	0.460	0.448	0.438	0.428	0.418	0.409	0.400
30+	0.511	0.497	0.482	0.469	0.457	0.445	0.434	0.424	0.414	0.404	0.396	0.387

表C.11 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	0.621	0.608	0.596	0.585	0.574	0.563	0.552	0.543	0.533	0.524	0.515	0.507
16	0.600	0.588	0.577	0.565	0.555	0.544	0.534	0.525	0.516	0.507	0.499	0.491
17	0.581	0.569	0.558	0.547	0.537	0.527	0.517	0.508	0.499	0.491	0.482	0.474
18	0.562	0.550	0.540	0.529	0.519	0.509	0.500	0.491	0.483	0.474	0.466	0.459
19	0.544	0.533	0.522	0.512	0.502	0.492	0.483	0.475	0.467	0.458	0.451	0.444
20	0.526	0.516	0.505	0.495	0.486	0.477	0.467	0.459	0.451	0.443	0.436	0.429
21	0.509	0.498	0.489	0.479	0.469	0.461	0.452	0.444	0.436	0.429	0.422	0.414
22	0.493	0.482	0.473	0.463	0.454	0.446	0.437	0.430	0.422	0.415	0.407	0.401
23	0.477	0.466	0.457	0.448	0.440	0.431	0.423	0.415	0.408	0.401	0.394	0.388
24	0.461	0.451	0.443	0.434	0.425	0.417	0.409	0.402	0.395	0.388	0.381	0.375
25	0.446	0.437	0.428	0.420	0.411	0.403	0.396	0.389	0.382	0.375	0.369	0.363
26	0.432	0.423	0.414	0.406	0.398	0.390	0.383	0.376	0.369	0.363	0.357	0.351
27	0.418	0.409	0.401	0.393	0.385	0.378	0.370	0.364	0.357	0.351	0.345	0.339
28	0.404	0.396	0.388	0.380	0.373	0.365	0.358	0.352	0.346	0.340	0.334	0.328
29	0.391	0.383	0.375	0.367	0.360	0.353	0.346	0.340	0.334	0.328	0.323	0.317
30+	0.379	0.371	0.363	0.356	0.348	0.342	0.335	0.329	0.323	0.318	0.312	0.307

表C.11 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.500	0.493	0.486	0.479	0.473	0.467	0.462	0.456	0.451	0.448	0.444	0.441
16	0.483	0.476	0.469	0.463	0.457	0.451	0.446	0.441	0.437	0.432	0.429	0.426
17	0.467	0.460	0.454	0.448	0.442	0.436	0.431	0.426	0.422	0.418	0.414	0.411
18	0.451	0.445	0.438	0.432	0.427	0.421	0.416	0.412	0.407	0.404	0.401	0.398
19	0.437	0.430	0.424	0.418	0.412	0.408	0.403	0.398	0.394	0.390	0.387	0.384
20	0.422	0.416	0.410	0.404	0.399	0.394	0.389	0.385	0.381	0.377	0.374	0.371
21	0.409	0.402	0.396	0.391	0.385	0.381	0.376	0.372	0.368	0.365	0.362	0.359
22	0.395	0.389	0.383	0.378	0.373	0.368	0.364	0.360	0.355	0.352	0.349	0.346
23	0.382	0.376	0.370	0.365	0.360	0.356	0.352	0.347	0.344	0.341	0.338	0.335
24	0.369	0.363	0.358	0.353	0.348	0.344	0.340	0.336	0.333	0.329	0.326	0.324
25	0.357	0.352	0.346	0.341	0.337	0.332	0.329	0.325	0.321	0.318	0.316	0.313
26	0.345	0.340	0.335	0.330	0.326	0.322	0.318	0.314	0.310	0.308	0.305	0.302
27	0.334	0.329	0.324	0.319	0.315	0.311	0.307	0.303	0.300	0.297	0.294	0.292
28	0.323	0.318	0.313	0.308	0.304	0.300	0.296	0.293	0.290	0.287	0.285	0.282
29	0.312	0.307	0.303	0.299	0.295	0.291	0.287	0.284	0.281	0.277	0.275	0.273
30+	0.302	0.297	0.293	0.289	0.285	0.281	0.277	0.274	0.271	0.269	0.266	0.264

表C.11 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.438	0.436	0.435	0.434	0.433	0.434	0.435	0.437	0.441	0.445
16	0.423	0.421	0.419	0.419	0.418	0.419	0.420	0.423	0.425	0.430
17	0.409	0.407	0.405	0.404	0.404	0.405	0.405	0.408	0.411	0.415
18	0.395	0.393	0.391	0.391	0.390	0.391	0.391	0.394	0.396	0.400
19	0.382	0.380	0.378	0.377	0.377	0.378	0.378	0.380	0.383	0.387
20	0.369	0.367	0.366	0.364	0.364	0.364	0.365	0.367	0.369	0.373
21	0.357	0.354	0.353	0.352	0.351	0.352	0.352	0.354	0.357	0.360
22	0.345	0.342	0.341	0.340	0.340	0.340	0.340	0.342	0.344	0.348
23	0.333	0.331	0.329	0.328	0.328	0.328	0.329	0.330	0.333	0.335
24	0.321	0.320	0.318	0.317	0.317	0.317	0.318	0.319	0.321	0.324
25	0.311	0.309	0.307	0.306	0.306	0.306	0.306	0.308	0.310	0.313
26	0.300	0.298	0.297	0.296	0.295	0.295	0.296	0.297	0.299	0.302
27	0.290	0.288	0.287	0.286	0.285	0.285	0.286	0.287	0.289	0.292
28	0.281	0.279	0.278	0.276	0.276	0.276	0.276	0.277	0.279	0.281
29	0.271	0.269	0.268	0.267	0.266	0.266	0.267	0.268	0.269	0.272
30+	0.262	0.260	0.259	0.258	0.258	0.257	0.258	0.259	0.260	0.262

表C.12 女性外照射致肺癌 ERR_{16Y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	8.087	9.091	4.007	3.631	3.359	3.129	2.930	2.755	2.602	2.469	2.351	2.250
16	—	8.267	3.893	3.525	3.257	3.036	2.843	2.673	2.524	2.393	2.281	2.183
17	—	—	3.765	3.417	3.163	2.945	2.758	2.592	2.450	2.322	2.212	2.117
18	—	—	—	3.318	3.067	2.856	2.676	2.515	2.376	2.252	2.146	2.053
19	—	—	—	—	2.978	2.773	2.596	2.441	2.304	2.186	2.081	1.991
20	—	—	—	—	—	2.690	2.518	2.368	2.236	2.121	2.019	1.931
21	—	—	—	—	—	—	2.443	2.298	2.170	2.057	1.959	1.874
22	—	—	—	—	—	—	—	2.230	2.104	1.995	1.900	1.817
23	—	—	—	—	—	—	—	—	2.042	1.936	1.843	1.763
24	—	—	—	—	—	—	—	—	—	1.877	1.787	1.709
25	—	—	—	—	—	—	—	—	—	—	1.734	1.658
26	—	—	—	—	—	—	—	—	—	—	—	1.608

表C.12 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	2.165	2.095	2.037	1.995	1.967	1.952	1.951	1.960	1.976	1.997	2.013	2.024
16	2.100	2.031	1.975	1.933	1.906	1.891	1.889	1.897	1.912	1.931	1.947	1.955
17	2.036	1.968	1.914	1.874	1.846	1.830	1.829	1.835	1.849	1.867	1.881	1.890
18	1.973	1.909	1.856	1.815	1.788	1.774	1.769	1.776	1.789	1.805	1.819	1.827
19	1.915	1.850	1.799	1.759	1.732	1.717	1.713	1.718	1.732	1.746	1.759	1.765
20	1.857	1.794	1.744	1.705	1.678	1.664	1.659	1.664	1.675	1.689	1.700	1.706
21	1.800	1.739	1.690	1.653	1.627	1.611	1.607	1.610	1.620	1.632	1.643	1.649
22	1.745	1.687	1.639	1.601	1.575	1.561	1.556	1.558	1.567	1.579	1.589	1.594
23	1.693	1.635	1.588	1.552	1.526	1.511	1.506	1.508	1.517	1.527	1.537	1.540
24	1.641	1.586	1.539	1.504	1.479	1.463	1.458	1.460	1.468	1.477	1.486	1.489
25	1.593	1.537	1.492	1.459	1.434	1.419	1.411	1.414	1.420	1.429	1.436	1.439
26	1.544	1.490	1.446	1.413	1.388	1.373	1.367	1.368	1.374	1.381	1.388	1.392
27	1.497	1.445	1.403	1.370	1.346	1.330	1.324	1.325	1.329	1.337	1.343	1.346
28	—	1.401	1.360	1.327	1.304	1.288	1.282	1.281	1.287	1.293	1.299	1.300
29	—	—	1.319	1.286	1.263	1.249	1.241	1.241	1.245	1.251	1.256	1.256
30+	—	—	—	1.246	1.225	1.209	1.202	1.201	1.204	1.210	1.214	1.215

表C.12 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	2.022	2.009	1.982	1.944	1.898	1.848	1.793	1.739	1.685	1.634	1.584	1.538
16	1.955	1.941	1.914	1.878	1.834	1.784	1.731	1.679	1.627	1.577	1.530	1.485
17	1.888	1.875	1.849	1.814	1.771	1.723	1.672	1.621	1.571	1.523	1.478	1.434
18	1.825	1.811	1.786	1.751	1.710	1.663	1.615	1.566	1.518	1.471	1.427	1.385
19	1.763	1.749	1.725	1.692	1.651	1.607	1.560	1.512	1.465	1.421	1.378	1.338
20	1.703	1.690	1.666	1.634	1.595	1.551	1.506	1.460	1.415	1.372	1.331	1.292
21	1.645	1.633	1.610	1.579	1.541	1.498	1.455	1.410	1.367	1.325	1.285	1.248
22	1.590	1.577	1.555	1.525	1.488	1.447	1.405	1.362	1.320	1.280	1.241	1.205
23	1.537	1.524	1.502	1.473	1.437	1.398	1.357	1.316	1.275	1.236	1.199	1.164
24	1.486	1.473	1.451	1.422	1.388	1.350	1.311	1.271	1.232	1.194	1.159	1.125
25	1.435	1.423	1.402	1.374	1.341	1.304	1.266	1.228	1.190	1.154	1.119	1.086
26	1.387	1.374	1.354	1.328	1.296	1.260	1.223	1.186	1.149	1.114	1.081	1.049
27	1.340	1.329	1.309	1.283	1.251	1.217	1.181	1.146	1.110	1.076	1.044	1.014
28	1.296	1.283	1.265	1.239	1.209	1.176	1.141	1.106	1.073	1.040	1.009	0.979
29	1.252	1.240	1.222	1.197	1.168	1.136	1.103	1.069	1.036	1.005	0.975	0.946
30+	1.211	1.199	1.180	1.156	1.128	1.097	1.065	1.033	1.001	0.970	0.941	0.914

表C. 12 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	1.495	1.455	1.418	1.384	1.352	1.323	1.297	1.273	1.251	1.231	1.213	1.197
16	1.444	1.405	1.369	1.336	1.306	1.278	1.252	1.229	1.208	1.189	1.172	1.156
17	1.394	1.357	1.322	1.290	1.261	1.234	1.210	1.187	1.166	1.148	1.131	1.116
18	1.347	1.310	1.277	1.246	1.218	1.192	1.168	1.146	1.126	1.108	1.092	1.078
19	1.301	1.266	1.233	1.204	1.176	1.151	1.128	1.107	1.088	1.070	1.055	1.040
20	1.256	1.222	1.191	1.162	1.136	1.112	1.089	1.069	1.050	1.033	1.018	1.004
21	1.213	1.181	1.151	1.123	1.097	1.074	1.052	1.032	1.014	0.998	0.983	0.970
22	1.172	1.141	1.111	1.085	1.060	1.037	1.016	0.997	0.979	0.964	0.949	0.936
23	1.132	1.101	1.074	1.047	1.024	1.001	0.981	0.963	0.946	0.931	0.917	0.904
24	1.093	1.064	1.037	1.012	0.989	0.967	0.948	0.930	0.914	0.899	0.885	0.873
25	1.056	1.028	1.002	0.977	0.955	0.934	0.915	0.898	0.882	0.868	0.855	0.843
26	1.020	0.993	0.968	0.944	0.922	0.903	0.884	0.867	0.852	0.838	0.826	0.814
27	0.985	0.959	0.934	0.912	0.891	0.872	0.854	0.838	0.823	0.810	0.797	0.786
28	0.952	0.926	0.903	0.881	0.861	0.842	0.825	0.809	0.795	0.782	0.770	0.760
29	0.919	0.895	0.872	0.851	0.832	0.813	0.797	0.782	0.768	0.755	0.744	0.734
30+	0.888	0.865	0.843	0.822	0.803	0.786	0.770	0.755	0.742	0.730	0.718	0.708

表C.12 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	1.183	1.171	1.160	1.151	1.143	1.138	1.133	1.131	1.130	1.130	1.133	1.137
16	1.142	1.130	1.120	1.111	1.104	1.098	1.093	1.091	1.090	1.091	1.093	1.097
17	1.103	1.091	1.081	1.072	1.065	1.059	1.055	1.052	1.052	1.052	1.054	1.058
18	1.064	1.053	1.043	1.035	1.028	1.022	1.018	1.016	1.014	1.015	1.017	1.020
19	1.028	1.017	1.007	0.999	0.992	0.986	0.982	0.980	0.979	0.979	0.981	0.984
20	0.992	0.982	0.972	0.964	0.957	0.952	0.948	0.946	0.944	0.944	0.946	0.949
21	0.958	0.948	0.939	0.931	0.924	0.919	0.915	0.912	0.911	0.911	0.913	0.915
22	0.925	0.915	0.906	0.898	0.892	0.887	0.883	0.880	0.879	0.879	0.880	0.883
23	0.893	0.883	0.875	0.867	0.861	0.856	0.852	0.850	0.848	0.848	0.849	0.852
24	0.862	0.853	0.844	0.837	0.831	0.826	0.822	0.820	0.819	0.819	0.820	0.822
25	0.833	0.823	0.815	0.808	0.802	0.798	0.794	0.791	0.790	0.790	0.791	0.793
26	0.804	0.795	0.787	0.780	0.775	0.770	0.766	0.764	0.762	0.762	0.763	0.765
27	0.777	0.768	0.760	0.753	0.748	0.743	0.740	0.737	0.736	0.735	0.736	0.738
28	0.750	0.741	0.734	0.727	0.722	0.718	0.714	0.711	0.710	0.710	0.710	0.712
29	0.724	0.716	0.709	0.702	0.697	0.693	0.689	0.687	0.685	0.685	0.685	0.687
30+	0.700	0.691	0.684	0.678	0.673	0.669	0.665	0.663	0.661	0.661	0.661	0.663

表C.12 (续)

受照年龄(<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	1.144	1.152	1.163	1.176	1.192	1.210	1.232	1.258	1.287	1.321
16	1.103	1.111	1.121	1.134	1.149	1.166	1.187	1.211	1.240	1.273
17	1.064	1.071	1.081	1.093	1.107	1.124	1.144	1.167	1.194	1.226
18	1.026	1.033	1.042	1.053	1.067	1.083	1.102	1.125	1.151	1.181
19	0.989	0.996	1.005	1.016	1.028	1.044	1.062	1.084	1.108	1.137
20	0.954	0.960	0.969	0.979	0.991	1.006	1.024	1.044	1.068	1.095
21	0.920	0.926	0.934	0.944	0.956	0.970	0.986	1.006	1.029	1.055
22	0.887	0.893	0.901	0.910	0.921	0.935	0.951	0.969	0.991	1.016
23	0.856	0.861	0.868	0.877	0.888	0.901	0.916	0.934	0.955	0.979
24	0.825	0.831	0.837	0.846	0.856	0.868	0.883	0.900	0.920	0.943
25	0.796	0.801	0.808	0.816	0.825	0.837	0.851	0.867	0.887	0.909
26	0.768	0.773	0.779	0.786	0.796	0.807	0.820	0.836	0.854	0.876
27	0.741	0.745	0.751	0.758	0.767	0.778	0.790	0.805	0.823	0.843
28	0.715	0.719	0.724	0.731	0.740	0.750	0.762	0.776	0.793	0.812
29	0.690	0.693	0.698	0.705	0.713	0.723	0.735	0.748	0.764	0.783
30+	0.665	0.669	0.674	0.680	0.688	0.697	0.708	0.721	0.736	0.754

表C.13 女性膀胱癌 ERR_{16Y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	12.615	11.525	10.887	10.073	9.361	9.033	8.776	8.279	8.134	8.333	8.271	8.541
16	—	11.185	10.575	9.784	9.093	8.784	8.243	8.062	7.929	7.840	8.088	8.368
17	—	—	10.271	9.504	8.833	8.542	8.018	7.850	7.730	7.653	7.911	7.901
18	—	—	—	9.232	8.581	8.307	7.798	7.644	7.538	7.471	7.439	7.738
19	—	—	—	—	8.336	8.079	7.585	7.445	7.350	7.295	7.273	7.580
20	—	—	—	—	—	7.858	7.379	7.252	7.168	7.123	7.111	7.127
21	—	—	—	—	—	—	7.179	7.064	6.692	6.657	6.954	6.978
22	—	—	—	—	—	—	—	6.881	6.521	6.495	6.501	6.834
23	—	—	—	—	—	—	—	—	6.355	6.339	6.354	6.694
24	—	—	—	—	—	—	—	—	—	6.188	6.210	6.259
25	—	—	—	—	—	—	—	—	—	—	6.071	6.127
26	—	—	—	—	—	—	—	—	—	—	—	5.999

表C. 13 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	5.998	5.486	5.189	4.937	4.712	4.515	4.334	4.173	4.026	3.893	3.771	3.664
16	5.797	5.330	5.031	4.788	4.571	4.382	4.206	4.048	3.904	3.774	3.657	3.552
17	5.638	5.164	4.878	4.644	4.434	4.247	4.079	3.926	3.787	3.662	3.546	3.443
18	5.445	5.017	4.739	4.504	4.301	4.121	3.959	3.811	3.673	3.550	3.439	3.340
19	5.295	4.859	4.593	4.368	4.173	3.999	3.841	3.695	3.562	3.445	3.338	3.240
20	5.112	4.721	4.452	4.243	4.047	3.879	3.724	3.583	3.459	3.342	3.236	3.142
21	4.971	4.571	4.324	4.114	3.931	3.763	3.614	3.477	3.354	3.242	3.140	3.047
22	4.834	4.441	4.191	3.988	3.813	3.651	3.506	3.372	3.253	3.144	3.044	2.955
23	4.664	4.299	4.071	3.874	3.698	3.542	3.402	3.271	3.154	3.050	2.953	2.865
24	4.535	4.177	3.945	3.756	3.586	3.436	3.301	3.175	3.061	2.958	2.865	2.780
25	4.409	4.058	3.831	3.641	3.483	3.333	3.198	3.078	2.968	2.868	2.779	2.695
26	4.250	3.927	3.712	3.537	3.377	3.232	3.103	2.986	2.881	2.782	2.695	2.614
27	4.133	3.815	3.605	3.427	3.275	3.140	3.010	2.898	2.793	2.700	2.614	2.536
28	—	3.691	3.492	3.329	3.175	3.045	2.924	2.811	2.710	2.618	2.535	2.460
29	—	—	3.392	3.226	3.084	2.953	2.836	2.728	2.629	2.538	2.458	2.384
30+	—	—	—	3.133	2.990	2.863	2.751	2.646	2.551	2.463	2.383	2.313

表C.13 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	3.567	3.482	3.407	3.344	3.292	3.250	3.215	3.188	3.166	3.148	3.129	3.109
16	3.457	3.376	3.305	3.243	3.190	3.148	3.115	3.087	3.066	3.046	3.028	3.008
17	3.352	3.272	3.202	3.141	3.091	3.051	3.016	2.991	2.968	2.950	2.931	2.911
18	3.253	3.174	3.105	3.046	2.996	2.956	2.922	2.897	2.874	2.857	2.838	2.818
19	3.154	3.076	3.010	2.953	2.905	2.864	2.833	2.805	2.784	2.766	2.746	2.726
20	3.057	2.983	2.918	2.862	2.815	2.776	2.743	2.717	2.696	2.677	2.659	2.639
21	2.966	2.892	2.828	2.775	2.728	2.690	2.658	2.632	2.612	2.592	2.575	2.555
22	2.877	2.804	2.743	2.688	2.644	2.606	2.575	2.549	2.530	2.511	2.492	2.473
23	2.788	2.720	2.660	2.608	2.562	2.525	2.496	2.471	2.449	2.431	2.412	2.394
24	2.703	2.637	2.579	2.528	2.484	2.448	2.418	2.394	2.373	2.353	2.337	2.317
25	2.621	2.557	2.500	2.450	2.408	2.371	2.343	2.318	2.298	2.279	2.261	2.242
26	2.544	2.480	2.423	2.375	2.334	2.298	2.269	2.245	2.225	2.208	2.189	2.171
27	2.466	2.403	2.349	2.303	2.262	2.228	2.199	2.175	2.155	2.137	2.121	2.102
28	2.390	2.330	2.279	2.233	2.192	2.160	2.131	2.107	2.087	2.070	2.053	2.035
29	2.320	2.261	2.210	2.164	2.126	2.093	2.064	2.042	2.023	2.005	1.988	1.971
30+	2.250	2.193	2.141	2.097	2.061	2.028	2.000	1.978	1.959	1.942	1.926	1.907

表C.13 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	3.083	3.054	3.017	2.973	2.924	2.870	2.813	2.754	2.694	2.634	2.576	2.520
16	2.984	2.954	2.919	2.876	2.829	2.776	2.721	2.663	2.605	2.548	2.491	2.437
17	2.888	2.859	2.823	2.782	2.736	2.685	2.631	2.576	2.519	2.464	2.409	2.357
18	2.795	2.766	2.732	2.692	2.646	2.598	2.545	2.492	2.437	2.383	2.331	2.279
19	2.704	2.676	2.642	2.604	2.560	2.512	2.462	2.410	2.357	2.305	2.254	2.204
20	2.616	2.589	2.557	2.519	2.476	2.430	2.382	2.331	2.280	2.229	2.180	2.132
21	2.533	2.506	2.473	2.436	2.396	2.351	2.303	2.255	2.206	2.156	2.109	2.062
22	2.451	2.424	2.394	2.357	2.318	2.274	2.228	2.182	2.133	2.086	2.040	1.995
23	2.372	2.345	2.316	2.281	2.242	2.200	2.156	2.110	2.063	2.018	1.973	1.929
24	2.296	2.270	2.241	2.207	2.169	2.128	2.085	2.041	1.996	1.951	1.908	1.867
25	2.222	2.197	2.168	2.135	2.098	2.059	2.017	1.974	1.931	1.888	1.846	1.806
26	2.150	2.126	2.098	2.066	2.030	1.992	1.952	1.910	1.868	1.826	1.786	1.747
27	2.082	2.057	2.031	1.999	1.964	1.927	1.888	1.847	1.807	1.766	1.728	1.690
28	2.015	1.992	1.965	1.934	1.901	1.865	1.826	1.787	1.748	1.709	1.671	1.634
29	1.951	1.927	1.901	1.871	1.840	1.805	1.767	1.730	1.691	1.653	1.617	1.581
30+	1.888	1.866	1.840	1.811	1.780	1.745	1.709	1.673	1.636	1.600	1.564	1.530

表C. 13 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	2.465	2.413	2.365	2.319	2.277	2.238	2.202	2.169	2.140	2.114	2.091	2.072
16	2.384	2.334	2.287	2.244	2.203	2.165	2.130	2.098	2.069	2.044	2.022	2.003
17	2.306	2.257	2.212	2.170	2.130	2.093	2.059	2.029	2.001	1.976	1.955	1.937
18	2.230	2.184	2.139	2.098	2.059	2.024	1.992	1.962	1.935	1.911	1.890	1.872
19	2.157	2.112	2.069	2.029	1.992	1.958	1.926	1.897	1.871	1.848	1.828	1.810
20	2.086	2.043	2.001	1.963	1.926	1.893	1.862	1.835	1.810	1.787	1.768	1.751
21	2.018	1.976	1.935	1.898	1.863	1.831	1.801	1.774	1.750	1.728	1.708	1.693
22	1.952	1.911	1.872	1.836	1.802	1.771	1.742	1.716	1.692	1.671	1.652	1.636
23	1.888	1.849	1.811	1.776	1.743	1.713	1.685	1.659	1.636	1.616	1.598	1.583
24	1.826	1.788	1.752	1.718	1.687	1.657	1.630	1.605	1.583	1.562	1.545	1.530
25	1.766	1.729	1.695	1.662	1.631	1.603	1.576	1.553	1.531	1.511	1.494	1.479
26	1.709	1.674	1.639	1.607	1.578	1.550	1.525	1.501	1.481	1.462	1.445	1.431
27	1.653	1.618	1.586	1.555	1.526	1.499	1.475	1.453	1.432	1.414	1.397	1.383
28	1.599	1.566	1.534	1.504	1.476	1.450	1.427	1.405	1.385	1.367	1.351	1.338
29	1.547	1.515	1.484	1.455	1.428	1.403	1.380	1.359	1.339	1.322	1.307	1.294
30+	1.497	1.465	1.436	1.408	1.382	1.358	1.335	1.315	1.296	1.279	1.264	1.251

表C.13 (续)

受照年龄(e) 岁	患癌年龄($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	2.057	2.046	2.038	2.036	2.039	2.047	2.063	2.087	2.121	2.168
16	1.988	1.977	1.970	1.967	1.970	1.978	1.993	2.016	2.048	2.093
17	1.922	1.911	1.904	1.901	1.903	1.911	1.925	1.947	1.977	2.021
18	1.858	1.848	1.840	1.837	1.839	1.846	1.860	1.880	1.910	1.951
19	1.796	1.785	1.779	1.776	1.777	1.784	1.796	1.816	1.844	1.883
20	1.737	1.727	1.719	1.717	1.717	1.724	1.735	1.754	1.781	1.818
21	1.679	1.668	1.662	1.659	1.660	1.666	1.677	1.694	1.720	1.755
22	1.624	1.614	1.606	1.603	1.604	1.609	1.620	1.637	1.661	1.695
23	1.569	1.560	1.553	1.550	1.550	1.555	1.565	1.580	1.604	1.637
24	1.517	1.508	1.501	1.498	1.498	1.503	1.512	1.527	1.549	1.580
25	1.468	1.458	1.451	1.448	1.448	1.452	1.461	1.475	1.496	1.526
26	1.419	1.409	1.403	1.399	1.400	1.404	1.411	1.425	1.445	1.474
27	1.372	1.363	1.356	1.353	1.352	1.356	1.364	1.377	1.396	1.423
28	1.327	1.317	1.312	1.308	1.308	1.311	1.318	1.330	1.348	1.374
29	1.283	1.274	1.268	1.265	1.264	1.267	1.274	1.285	1.302	1.327
30+	1.240	1.232	1.226	1.222	1.222	1.224	1.231	1.242	1.259	1.282

表C.14 女性食管癌、骨和关节恶性肿瘤 ERR_{167} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	15	16	17	18	19	20	21	22	23	24	25	26
15	24.099	20.139	17.021	14.530	12.517	10.871	9.513	8.383	7.437	6.636	5.956	5.375
16	—	19.542	16.516	14.099	12.145	10.548	9.231	8.134	7.214	6.438	5.778	5.214
17	—	—	16.026	13.681	11.784	10.234	8.956	7.891	6.999	6.245	5.605	5.057
18	—	—	—	13.275	11.435	9.930	8.690	7.656	6.790	6.059	5.437	4.905
19	—	—	—	—	11.095	9.636	8.431	7.429	6.588	5.878	5.274	4.758
20	—	—	—	—	—	9.349	8.180	7.208	6.392	5.702	5.116	4.615
21	—	—	—	—	—	—	7.937	6.993	6.201	5.532	4.963	4.477
22	—	—	—	—	—	—	—	6.785	6.016	5.367	4.815	4.343
23	—	—	—	—	—	—	—	—	5.837	5.207	4.671	4.212
24	—	—	—	—	—	—	—	—	—	5.051	4.531	4.086
25	—	—	—	—	—	—	—	—	—	—	4.396	3.964
26	—	—	—	—	—	—	—	—	—	—	—	3.845

表C. 14 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	27	28	29	30	31	32	33	34	35	36	37	38
15	4.876	4.443	4.068	3.741	3.452	3.197	2.970	2.766	2.582	2.414	2.261	2.121
16	4.729	4.309	3.945	3.627	3.347	3.099	2.879	2.681	2.502	2.339	2.190	2.054
17	4.586	4.179	3.826	3.517	3.245	3.005	2.790	2.597	2.424	2.266	2.122	1.990
18	4.448	4.053	3.710	3.410	3.146	2.912	2.704	2.518	2.349	2.196	2.056	1.927
19	4.315	3.931	3.597	3.306	3.050	2.823	2.621	2.440	2.276	2.128	1.992	1.868
20	4.185	3.812	3.489	3.206	2.957	2.737	2.541	2.365	2.206	2.062	1.930	1.809
21	4.059	3.697	3.383	3.108	2.867	2.653	2.463	2.292	2.138	1.998	1.870	1.753
22	3.937	3.586	3.281	3.014	2.780	2.572	2.387	2.221	2.071	1.936	1.812	1.698
23	3.818	3.478	3.181	2.922	2.695	2.493	2.314	2.153	2.008	1.876	1.755	1.645
24	3.704	3.373	3.086	2.834	2.613	2.417	2.243	2.087	1.946	1.818	1.701	1.594
25	3.593	3.271	2.992	2.748	2.533	2.343	2.174	2.023	1.886	1.761	1.648	1.544
26	3.484	3.173	2.901	2.665	2.457	2.272	2.108	1.960	1.828	1.707	1.597	1.496
27	3.380	3.077	2.814	2.584	2.381	2.202	2.043	1.900	1.771	1.654	1.547	1.450
28	—	2.984	2.729	2.506	2.309	2.135	1.980	1.842	1.716	1.603	1.500	1.405
29	—	—	2.646	2.429	2.239	2.070	1.920	1.785	1.664	1.553	1.453	1.361
30+	—	—	—	2.356	2.171	2.007	1.861	1.730	1.612	1.505	1.408	1.319

表C. 14 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	39	40	41	42	43	44	45	46	47	48	49	50
15	1.991	1.871	1.760	1.657	1.561	1.472	1.389	1.313	1.241	1.175	1.114	1.057
16	1.928	1.812	1.704	1.604	1.512	1.425	1.346	1.271	1.202	1.138	1.079	1.023
17	1.868	1.755	1.650	1.553	1.464	1.380	1.302	1.231	1.164	1.101	1.044	0.990
18	1.810	1.700	1.598	1.505	1.417	1.336	1.261	1.192	1.127	1.067	1.011	0.959
19	1.753	1.647	1.548	1.457	1.373	1.295	1.222	1.154	1.091	1.033	0.979	0.928
20	1.698	1.595	1.500	1.411	1.330	1.254	1.183	1.117	1.057	1.000	0.948	0.899
21	1.644	1.545	1.452	1.367	1.287	1.214	1.145	1.082	1.023	0.968	0.917	0.870
22	1.593	1.496	1.407	1.324	1.247	1.175	1.109	1.048	0.990	0.938	0.889	0.842
23	1.544	1.450	1.362	1.282	1.208	1.138	1.074	1.014	0.959	0.908	0.860	0.816
24	1.495	1.404	1.320	1.242	1.169	1.103	1.041	0.983	0.929	0.879	0.833	0.790
25	1.449	1.360	1.278	1.203	1.133	1.068	1.007	0.951	0.900	0.852	0.807	0.765
26	1.403	1.318	1.239	1.165	1.097	1.034	0.975	0.922	0.871	0.825	0.781	0.740
27	1.360	1.276	1.200	1.129	1.062	1.001	0.945	0.892	0.844	0.798	0.756	0.717
28	1.317	1.237	1.162	1.093	1.029	0.970	0.915	0.864	0.817	0.773	0.732	0.694
29	1.276	1.198	1.126	1.059	0.997	0.939	0.887	0.837	0.791	0.748	0.709	0.673
30+	1.236	1.160	1.091	1.026	0.966	0.910	0.858	0.811	0.766	0.725	0.686	0.651

表C. 14 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
15	1.003	0.954	0.908	0.865	0.825	0.788	0.753	0.721	0.691	0.662	0.636	0.611
16	0.972	0.923	0.879	0.837	0.799	0.763	0.729	0.697	0.668	0.641	0.615	0.591
17	0.941	0.894	0.851	0.811	0.773	0.738	0.705	0.675	0.647	0.620	0.596	0.572
18	0.911	0.866	0.824	0.784	0.748	0.714	0.683	0.653	0.626	0.600	0.576	0.553
19	0.882	0.838	0.797	0.760	0.725	0.691	0.661	0.632	0.606	0.581	0.558	0.536
20	0.853	0.811	0.772	0.735	0.701	0.670	0.640	0.612	0.586	0.562	0.540	0.518
21	0.826	0.785	0.747	0.712	0.679	0.648	0.620	0.592	0.568	0.544	0.522	0.502
22	0.800	0.760	0.724	0.689	0.657	0.627	0.599	0.574	0.550	0.527	0.505	0.486
23	0.774	0.736	0.701	0.667	0.636	0.607	0.580	0.555	0.532	0.510	0.489	0.470
24	0.750	0.713	0.678	0.646	0.616	0.588	0.562	0.537	0.515	0.494	0.473	0.454
25	0.726	0.690	0.657	0.625	0.596	0.569	0.544	0.520	0.498	0.478	0.458	0.440
26	0.703	0.668	0.636	0.605	0.577	0.551	0.527	0.504	0.482	0.462	0.443	0.426
27	0.681	0.647	0.616	0.586	0.559	0.533	0.509	0.487	0.467	0.447	0.429	0.412
28	0.659	0.626	0.596	0.568	0.541	0.517	0.494	0.472	0.452	0.433	0.415	0.399
29	0.638	0.606	0.577	0.550	0.524	0.500	0.477	0.457	0.437	0.419	0.402	0.386
30+	0.618	0.587	0.559	0.532	0.507	0.484	0.463	0.442	0.424	0.406	0.390	0.374

表C. 14 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	0.588	0.566	0.546	0.526	0.509	0.492	0.476	0.462	0.448	0.436	0.424	0.413
16	0.568	0.548	0.528	0.509	0.492	0.476	0.461	0.447	0.433	0.421	0.409	0.399
17	0.550	0.530	0.511	0.493	0.476	0.460	0.446	0.432	0.419	0.408	0.396	0.386
18	0.533	0.512	0.494	0.477	0.461	0.445	0.431	0.418	0.406	0.394	0.383	0.374
19	0.515	0.496	0.478	0.461	0.446	0.431	0.417	0.405	0.393	0.381	0.370	0.361
20	0.499	0.480	0.462	0.446	0.431	0.417	0.404	0.391	0.379	0.369	0.359	0.349
21	0.482	0.465	0.448	0.432	0.417	0.403	0.391	0.378	0.367	0.357	0.346	0.338
22	0.467	0.449	0.433	0.418	0.404	0.390	0.378	0.366	0.355	0.345	0.335	0.326
23	0.452	0.435	0.419	0.404	0.391	0.378	0.365	0.354	0.344	0.333	0.325	0.316
24	0.437	0.421	0.406	0.392	0.378	0.365	0.353	0.343	0.332	0.322	0.314	0.305
25	0.423	0.407	0.393	0.378	0.366	0.353	0.342	0.332	0.321	0.312	0.303	0.295
26	0.410	0.394	0.380	0.367	0.354	0.342	0.331	0.321	0.311	0.302	0.293	0.285
27	0.397	0.382	0.368	0.355	0.343	0.331	0.320	0.310	0.301	0.292	0.284	0.276
28	0.384	0.369	0.356	0.343	0.331	0.321	0.310	0.300	0.291	0.283	0.275	0.267
29	0.371	0.357	0.345	0.332	0.320	0.310	0.300	0.290	0.281	0.273	0.266	0.258
30+	0.360	0.346	0.334	0.322	0.310	0.300	0.290	0.281	0.272	0.264	0.257	0.250

表C. 14 (续)

受照年龄(<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁									
	75	76	77	78	79	80	81	82	83	84+
15	0.403	0.393	0.385	0.377	0.370	0.363	0.358	0.352	0.348	0.345
16	0.390	0.380	0.372	0.364	0.357	0.351	0.346	0.341	0.336	0.333
17	0.376	0.368	0.360	0.352	0.345	0.339	0.334	0.329	0.325	0.322
18	0.364	0.355	0.348	0.340	0.334	0.327	0.322	0.318	0.314	0.311
19	0.352	0.344	0.336	0.329	0.323	0.317	0.311	0.307	0.303	0.300
20	0.340	0.332	0.325	0.318	0.311	0.306	0.301	0.296	0.293	0.290
21	0.329	0.321	0.314	0.307	0.301	0.295	0.291	0.287	0.283	0.280
22	0.318	0.310	0.304	0.297	0.291	0.286	0.281	0.277	0.274	0.271
23	0.307	0.300	0.293	0.287	0.281	0.276	0.272	0.268	0.264	0.261
24	0.297	0.290	0.284	0.277	0.272	0.267	0.263	0.259	0.255	0.252
25	0.288	0.281	0.274	0.268	0.263	0.258	0.254	0.250	0.247	0.244
26	0.278	0.272	0.265	0.259	0.254	0.250	0.245	0.242	0.239	0.236
27	0.269	0.262	0.256	0.251	0.246	0.241	0.237	0.233	0.230	0.228
28	0.260	0.253	0.248	0.242	0.237	0.233	0.229	0.225	0.223	0.220
29	0.251	0.245	0.240	0.234	0.230	0.225	0.221	0.218	0.215	0.213
30+	0.243	0.237	0.232	0.227	0.222	0.218	0.214	0.211	0.207	0.205

C.4 女性乳腺癌超额危险系数

女性乳腺癌超额危险系数见表C.15。

表C.15 女性乳腺癌 ERR_{16Y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁							
	15	16	17	18	19	20	21	22
15	3.824	4.236	4.673	5.162	5.688	6.262	6.873	7.522
16	—	4.027	4.448	4.913	5.410	5.950	6.532	7.155
17	—	—	4.223	4.665	5.152	5.665	6.216	6.812
18	—	—	—	4.439	4.895	5.391	5.918	6.478
19	—	—	—	—	4.658	5.125	5.629	6.160
20	—	—	—	—	—	4.879	5.348	5.858
21	—	—	—	—	—	—	5.094	5.572
22	—	—	—	—	—	—	—	5.303

表C. 15 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	23	24	25	26	27	28	29	30
15	8.224	8.962	4.325	2.644	2.421	2.501	2.679	2.846
16	7.820	8.525	4.112	2.515	2.303	2.379	2.549	2.707
17	7.438	8.110	3.911	2.392	2.190	2.264	2.425	2.575
18	7.072	7.709	3.722	2.275	2.084	2.153	2.307	2.450
19	6.729	7.336	3.539	2.165	1.981	2.048	2.194	2.330
20	6.401	6.978	3.369	2.060	1.885	1.949	2.087	2.217
21	6.088	6.634	3.204	1.959	1.793	1.853	1.985	2.108
22	5.790	6.312	3.048	1.863	1.706	1.763	1.888	2.005
23	5.508	6.004	2.898	1.772	1.622	1.677	1.796	1.908
24	—	5.710	2.757	1.686	1.543	1.595	1.708	1.814
25	—	—	2.622	1.604	1.469	1.517	1.625	1.726
26	—	—	—	1.526	1.397	1.444	1.546	1.642
27	—	—	—	—	1.329	1.373	1.471	1.562
28	—	—	—	—	—	1.306	1.399	1.486
29	—	—	—	—	—	—	1.330	1.413
30	—	—	—	—	—	—	—	1.344

表C. 15 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	31	32	33	34	35	36	37	38
15	2.924	2.883	2.742	2.547	2.340	2.148	1.984	1.848
16	2.782	2.742	2.608	2.423	2.227	2.044	1.887	1.758
17	2.646	2.608	2.481	2.304	2.118	1.944	1.795	1.672
18	2.516	2.481	2.360	2.193	2.015	1.849	1.707	1.590
19	2.394	2.361	2.245	2.085	1.916	1.759	1.624	1.513
20	2.278	2.245	2.135	1.984	1.823	1.673	1.545	1.439
21	2.166	2.136	2.031	1.887	1.734	1.592	1.469	1.369
22	2.060	2.031	1.932	1.795	1.649	1.514	1.398	1.302
23	1.960	1.933	1.838	1.707	1.569	1.440	1.330	1.239
24	1.864	1.838	1.748	1.624	1.493	1.370	1.265	1.178
25	1.774	1.748	1.663	1.545	1.420	1.303	1.203	1.121
26	1.687	1.663	1.582	1.470	1.350	1.240	1.144	1.066
27	1.605	1.582	1.505	1.398	1.285	1.179	1.089	1.014
28	1.526	1.505	1.431	1.329	1.222	1.122	1.035	0.965
29	1.452	1.432	1.361	1.265	1.162	1.067	0.985	0.918
30	1.381	1.362	1.295	1.203	1.106	1.015	0.937	0.873
31	1.314	1.295	1.232	1.145	1.052	0.966	0.891	0.830
32	—	1.232	1.172	1.089	1.000	0.919	0.848	0.790
33	—	—	1.115	1.036	0.951	0.874	0.806	0.751
34	—	—	—	0.985	0.905	0.831	0.767	0.715
35	—	—	—	—	0.861	0.791	0.730	0.680
36	—	—	—	—	—	0.752	0.694	0.647
37	—	—	—	—	—	—	0.660	0.615
38	—	—	—	—	—	—	—	0.585

表C.15 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	39	40	41	42	43	44	45	46
15	1.741	1.659	1.598	1.558	1.534	1.526	1.531	1.549
16	1.656	1.578	1.521	1.482	1.459	1.451	1.456	1.474
17	1.575	1.501	1.446	1.410	1.388	1.380	1.385	1.402
18	1.498	1.428	1.376	1.341	1.320	1.313	1.318	1.334
19	1.425	1.358	1.309	1.275	1.256	1.249	1.253	1.269
20	1.356	1.292	1.245	1.213	1.195	1.188	1.192	1.207
21	1.289	1.229	1.184	1.154	1.136	1.130	1.134	1.148
22	1.227	1.169	1.126	1.098	1.081	1.075	1.079	1.092
23	1.167	1.112	1.072	1.044	1.028	1.023	1.026	1.039
24	1.110	1.057	1.019	0.993	0.978	0.973	0.976	0.988
25	1.056	1.006	0.970	0.945	0.931	0.925	0.929	0.940
26	1.004	0.957	0.922	0.899	0.885	0.880	0.883	0.894
27	0.955	0.910	0.877	0.855	0.842	0.837	0.840	0.850
28	0.909	0.866	0.834	0.813	0.801	0.796	0.799	0.809
29	0.864	0.824	0.794	0.774	0.762	0.758	0.760	0.769
30	0.822	0.783	0.755	0.736	0.725	0.721	0.723	0.732
31	0.782	0.745	0.718	0.700	0.689	0.686	0.688	0.696
32	0.744	0.709	0.683	0.666	0.656	0.652	0.654	0.662
33	0.708	0.674	0.650	0.633	0.624	0.620	0.623	0.630
34	0.673	0.641	0.618	0.602	0.593	0.590	0.592	0.599
35	0.640	0.610	0.588	0.573	0.564	0.561	0.563	0.570
36	0.609	0.580	0.559	0.545	0.537	0.534	0.536	0.542
37	0.579	0.552	0.532	0.518	0.511	0.508	0.510	0.516
38	0.551	0.525	0.506	0.493	0.486	0.483	0.485	0.491
39	0.524	0.499	0.482	0.469	0.462	0.460	0.461	0.467
40	—	0.475	0.458	0.446	0.439	0.437	0.439	0.444
41	—	—	0.436	0.424	0.418	0.416	0.417	0.422
42	—	—	—	0.404	0.398	0.395	0.397	0.402
43	—	—	—	—	0.378	0.376	0.378	0.382
44	—	—	—	—	—	0.358	0.359	0.363
45	—	—	—	—	—	—	0.342	0.346
46	—	—	—	—	—	—	—	0.329

表C.15 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	47	48	49	50	51	52	53	54
15	1.581	1.624	1.680	1.749	1.743	1.748	1.763	1.788
16	1.503	1.545	1.598	1.664	1.658	1.663	1.677	1.701
17	1.430	1.470	1.520	1.583	1.577	1.582	1.595	1.618
18	1.360	1.398	1.446	1.505	1.500	1.505	1.518	1.539
19	1.294	1.330	1.376	1.432	1.427	1.431	1.444	1.464
20	1.231	1.265	1.308	1.362	1.357	1.361	1.373	1.393
21	1.171	1.203	1.245	1.296	1.291	1.295	1.306	1.325
22	1.114	1.144	1.184	1.233	1.228	1.232	1.242	1.260
23	1.059	1.089	1.126	1.172	1.168	1.172	1.182	1.199
24	1.008	1.036	1.071	1.115	1.111	1.115	1.124	1.140
25	0.959	0.985	1.019	1.061	1.057	1.060	1.069	1.085
26	0.912	0.937	0.969	1.009	1.006	1.009	1.017	1.032
27	0.867	0.891	0.922	0.960	0.957	0.959	0.968	0.981
28	0.825	0.848	0.877	0.913	0.910	0.913	0.920	0.934
29	0.785	0.806	0.834	0.869	0.866	0.868	0.876	0.888
30	0.747	0.767	0.794	0.826	0.823	0.826	0.833	0.845
31	0.710	0.730	0.755	0.786	0.783	0.785	0.792	0.803
32	0.676	0.694	0.718	0.748	0.745	0.747	0.754	0.764
33	0.643	0.660	0.683	0.711	0.709	0.711	0.717	0.727
34	0.611	0.628	0.650	0.677	0.674	0.676	0.682	0.692
35	0.581	0.597	0.618	0.643	0.641	0.643	0.649	0.658
36	0.553	0.568	0.588	0.612	0.610	0.612	0.617	0.626
37	0.526	0.541	0.559	0.582	0.580	0.582	0.587	0.595
38	0.500	0.514	0.532	0.554	0.552	0.553	0.558	0.566
39	0.476	0.489	0.506	0.527	0.525	0.527	0.531	0.539
40	0.453	0.465	0.481	0.501	0.499	0.501	0.505	0.512
41	0.431	0.443	0.458	0.477	0.475	0.476	0.481	0.487
42	0.410	0.421	0.436	0.453	0.452	0.453	0.457	0.464
43	0.390	0.400	0.414	0.431	0.430	0.431	0.435	0.441
44	0.371	0.381	0.394	0.410	0.409	0.410	0.414	0.419
45	0.353	0.362	0.375	0.390	0.389	0.390	0.393	0.399
46	0.335	0.345	0.357	0.371	0.370	0.371	0.374	0.380
47	0.319	0.328	0.339	0.353	0.352	0.353	0.356	0.361
48	—	0.312	0.323	0.336	0.335	0.336	0.339	0.343
49	—	—	0.307	0.320	0.318	0.319	0.322	0.327
50	—	—	—	0.304	0.303	0.304	0.306	0.311
51	—	—	—	—	0.288	0.289	0.291	0.296
52	—	—	—	—	—	0.275	0.277	0.281
53	—	—	—	—	—	—	0.264	0.267
54	—	—	—	—	—	—	—	0.254

表C. 15 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	55	56	57	58	59	60	61	62
15	1.822	1.865	1.916	1.975	2.042	2.115	2.193	2.277
16	1.733	1.774	1.823	1.879	1.942	2.011	2.086	2.165
17	1.649	1.688	1.734	1.787	1.847	1.913	1.984	2.060
18	1.568	1.605	1.649	1.700	1.757	1.820	1.888	1.959
19	1.492	1.527	1.569	1.617	1.672	1.731	1.796	1.864
20	1.419	1.452	1.492	1.538	1.590	1.647	1.708	1.773
21	1.350	1.382	1.420	1.463	1.512	1.566	1.625	1.686
22	1.284	1.314	1.350	1.392	1.439	1.490	1.546	1.604
23	1.221	1.250	1.284	1.324	1.369	1.417	1.470	1.526
24	1.162	1.189	1.222	1.260	1.302	1.348	1.398	1.452
25	1.105	1.131	1.162	1.198	1.238	1.283	1.330	1.381
26	1.051	1.076	1.106	1.140	1.178	1.220	1.265	1.313
27	1.000	1.024	1.052	1.084	1.120	1.160	1.204	1.249
28	0.951	0.974	1.000	1.031	1.066	1.104	1.145	1.188
29	0.905	0.926	0.952	0.981	1.014	1.050	1.089	1.130
30	0.861	0.881	0.905	0.933	0.964	0.999	1.036	1.075
31	0.819	0.838	0.861	0.888	0.917	0.950	0.986	1.023
32	0.779	0.797	0.819	0.844	0.873	0.904	0.937	0.973
33	0.741	0.758	0.779	0.803	0.830	0.860	0.892	0.926
34	0.705	0.721	0.741	0.764	0.790	0.818	0.848	0.880
35	0.670	0.686	0.705	0.727	0.751	0.778	0.807	0.837
36	0.638	0.653	0.671	0.691	0.714	0.740	0.767	0.797
37	0.607	0.621	0.638	0.658	0.680	0.704	0.730	0.758
38	0.577	0.590	0.607	0.625	0.647	0.670	0.694	0.721
39	0.549	0.562	0.577	0.595	0.615	0.637	0.661	0.686
40	0.522	0.534	0.549	0.566	0.585	0.606	0.628	0.652
41	0.497	0.508	0.522	0.538	0.556	0.576	0.598	0.620
42	0.472	0.483	0.497	0.512	0.529	0.548	0.569	0.590
43	0.449	0.460	0.473	0.487	0.504	0.521	0.541	0.561
44	0.427	0.437	0.450	0.463	0.479	0.496	0.514	0.534
45	0.407	0.416	0.428	0.441	0.456	0.472	0.489	0.508
46	0.387	0.396	0.407	0.419	0.433	0.449	0.466	0.483
47	0.368	0.377	0.387	0.399	0.412	0.427	0.443	0.460
48	0.350	0.358	0.368	0.379	0.392	0.406	0.421	0.437
49	0.333	0.341	0.350	0.361	0.373	0.386	0.401	0.416
50	0.317	0.324	0.333	0.343	0.355	0.367	0.381	0.396
51	0.301	0.308	0.317	0.327	0.338	0.350	0.363	0.376
52	0.287	0.293	0.301	0.311	0.321	0.333	0.345	0.358
53	0.272	0.279	0.287	0.295	0.305	0.316	0.328	0.340
54	0.259	0.265	0.273	0.281	0.290	0.301	0.312	0.324
55	0.247	0.252	0.259	0.267	0.276	0.286	0.297	0.308
56	—	0.240	0.247	0.254	0.263	0.272	0.282	0.293
57	—	—	0.235	0.242	0.250	0.259	0.269	0.279
58	—	—	—	0.230	0.238	0.246	0.256	0.265
59	—	—	—	—	0.226	0.234	0.243	0.252
60+	—	—	—	—	—	0.223	0.231	0.240

表C.15 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	63	64	65	66	67	68	69	70
15	2.363	2.452	2.540	2.627	2.711	2.791	2.865	2.933
16	2.248	2.332	2.416	2.499	2.579	2.655	2.725	2.790
17	2.138	2.218	2.298	2.377	2.453	2.525	2.592	2.654
18	2.034	2.110	2.186	2.261	2.333	2.402	2.466	2.525
19	1.935	2.007	2.080	2.151	2.220	2.285	2.346	2.402
20	1.840	1.909	1.978	2.046	2.111	2.173	2.231	2.285
21	1.751	1.816	1.882	1.946	2.008	2.067	2.122	2.173
22	1.665	1.728	1.790	1.851	1.911	1.967	2.019	2.067
23	1.584	1.643	1.703	1.761	1.817	1.871	1.920	1.966
24	1.507	1.563	1.620	1.675	1.729	1.779	1.827	1.870
25	1.433	1.487	1.541	1.593	1.644	1.693	1.738	1.779
26	1.363	1.414	1.465	1.516	1.564	1.610	1.653	1.692
27	1.297	1.345	1.394	1.442	1.488	1.532	1.572	1.610
28	1.234	1.280	1.326	1.372	1.415	1.457	1.496	1.531
29	1.173	1.217	1.261	1.305	1.346	1.386	1.423	1.457
30	1.116	1.158	1.200	1.241	1.281	1.318	1.353	1.386
31	1.062	1.102	1.141	1.180	1.218	1.254	1.287	1.318
32	1.010	1.048	1.086	1.123	1.159	1.193	1.224	1.254
33	0.961	0.997	1.033	1.068	1.102	1.135	1.165	1.193
34	0.914	0.948	0.982	1.016	1.049	1.079	1.108	1.135
35	0.869	0.902	0.934	0.966	0.997	1.027	1.054	1.079
36	0.827	0.858	0.889	0.919	0.949	0.977	1.002	1.027
37	0.787	0.816	0.845	0.875	0.903	0.929	0.954	0.976
38	0.748	0.776	0.804	0.832	0.858	0.884	0.907	0.929
39	0.712	0.738	0.765	0.791	0.817	0.841	0.863	0.884
40	0.677	0.702	0.728	0.753	0.777	0.800	0.821	0.840
41	0.644	0.668	0.692	0.716	0.739	0.761	0.781	0.799
42	0.613	0.635	0.659	0.681	0.703	0.723	0.743	0.760
43	0.583	0.605	0.626	0.648	0.669	0.688	0.707	0.723
44	0.554	0.575	0.596	0.616	0.636	0.655	0.672	0.688
45	0.527	0.547	0.567	0.586	0.605	0.623	0.639	0.655
46	0.502	0.520	0.539	0.558	0.575	0.592	0.608	0.623
47	0.477	0.495	0.513	0.530	0.547	0.563	0.578	0.592
48	0.454	0.471	0.488	0.505	0.521	0.536	0.550	0.563
49	0.432	0.448	0.464	0.480	0.495	0.510	0.523	0.536
50	0.411	0.426	0.441	0.457	0.471	0.485	0.498	0.510
51	0.391	0.405	0.420	0.434	0.448	0.461	0.474	0.485
52	0.372	0.385	0.399	0.413	0.426	0.439	0.450	0.461
53	0.353	0.367	0.380	0.393	0.405	0.417	0.428	0.439
54	0.336	0.349	0.361	0.374	0.386	0.397	0.408	0.417
55	0.320	0.332	0.344	0.356	0.367	0.378	0.388	0.397
56	0.304	0.316	0.327	0.338	0.349	0.359	0.369	0.378
57	0.289	0.300	0.311	0.322	0.332	0.342	0.351	0.359
58	0.275	0.286	0.296	0.306	0.316	0.325	0.334	0.342
59	0.262	0.272	0.281	0.291	0.300	0.309	0.317	0.325
60+	0.249	0.258	0.268	0.277	0.286	0.294	0.302	0.309

表C. 15 (续)

受照年龄(e) 岁	患癌年龄 (e+t) 岁							
	71	72	73	74	75	76	77	78
15	2.996	3.055	3.111	3.167	3.226	3.293	3.372	3.469
16	2.850	2.906	2.959	3.013	3.069	3.132	3.207	3.300
17	2.711	2.764	2.815	2.866	2.919	2.980	3.051	3.139
18	2.579	2.629	2.678	2.726	2.777	2.834	2.902	2.986
19	2.453	2.501	2.547	2.593	2.642	2.696	2.761	2.840
20	2.334	2.379	2.423	2.467	2.513	2.565	2.626	2.701
21	2.220	2.263	2.305	2.346	2.390	2.440	2.498	2.570
22	2.112	2.153	2.192	2.232	2.274	2.321	2.376	2.444
23	2.008	2.048	2.085	2.123	2.163	2.207	2.260	2.325
24	1.911	1.948	1.984	2.019	2.057	2.100	2.150	2.212
25	1.817	1.853	1.887	1.921	1.957	1.997	2.045	2.104
26	1.729	1.763	1.795	1.827	1.862	1.900	1.945	2.001
27	1.644	1.677	1.707	1.738	1.771	1.807	1.851	1.904
28	1.564	1.595	1.624	1.653	1.684	1.719	1.760	1.811
29	1.488	1.517	1.545	1.573	1.602	1.635	1.674	1.723
30	1.415	1.443	1.470	1.496	1.524	1.555	1.593	1.639
31	1.346	1.373	1.398	1.423	1.450	1.480	1.515	1.559
32	1.281	1.306	1.330	1.354	1.379	1.407	1.441	1.483
33	1.218	1.242	1.265	1.288	1.312	1.339	1.371	1.410
34	1.159	1.181	1.203	1.225	1.248	1.274	1.304	1.342
35	1.102	1.124	1.145	1.165	1.187	1.211	1.240	1.276
36	1.049	1.069	1.089	1.108	1.129	1.152	1.180	1.214
37	0.997	1.017	1.036	1.054	1.074	1.096	1.122	1.155
38	0.949	0.967	0.985	1.003	1.022	1.043	1.068	1.098
39	0.902	0.920	0.937	0.954	0.972	0.992	1.016	1.045
40	0.859	0.875	0.891	0.907	0.924	0.943	0.966	0.994
41	0.817	0.833	0.848	0.863	0.879	0.898	0.919	0.945
42	0.777	0.792	0.807	0.821	0.836	0.854	0.874	0.899
43	0.739	0.753	0.767	0.781	0.796	0.812	0.832	0.855
44	0.703	0.717	0.730	0.743	0.757	0.772	0.791	0.814
45	0.669	0.682	0.694	0.707	0.720	0.735	0.752	0.774
46	0.636	0.648	0.660	0.672	0.685	0.699	0.716	0.736
47	0.605	0.617	0.628	0.639	0.651	0.665	0.681	0.700
48	0.575	0.587	0.598	0.608	0.620	0.632	0.648	0.666
49	0.547	0.558	0.568	0.579	0.589	0.602	0.616	0.634
50	0.521	0.531	0.541	0.550	0.561	0.572	0.586	0.603
51	0.495	0.505	0.514	0.523	0.533	0.544	0.557	0.573
52	0.471	0.480	0.489	0.498	0.507	0.518	0.530	0.545
53	0.448	0.457	0.465	0.474	0.483	0.493	0.504	0.519
54	0.426	0.435	0.443	0.451	0.459	0.469	0.480	0.494
55	0.406	0.413	0.421	0.429	0.437	0.446	0.456	0.469
56	0.386	0.393	0.401	0.408	0.415	0.424	0.434	0.447
57	0.367	0.374	0.381	0.388	0.395	0.403	0.413	0.425
58	0.349	0.356	0.362	0.369	0.376	0.384	0.393	0.404
59	0.332	0.338	0.345	0.351	0.358	0.365	0.374	0.384
60+	0.316	0.322	0.328	0.334	0.340	0.347	0.355	0.366

表C.15 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁					
	79	80	81	82	83	84+
15	3.591	3.748	3.951	4.217	4.570	5.047
16	3.416	3.565	3.758	4.011	4.348	4.801
17	3.249	3.391	3.575	3.816	4.136	4.567
18	3.091	3.226	3.400	3.630	3.934	4.344
19	2.940	3.068	3.235	3.453	3.742	4.132
20	2.797	2.919	3.077	3.284	3.560	3.931
21	2.660	2.776	2.927	3.124	3.386	3.739
22	2.530	2.641	2.784	2.972	3.221	3.557
23	2.407	2.512	2.648	2.827	3.064	3.383
24	2.290	2.390	2.519	2.689	2.914	3.218
25	2.178	2.273	2.396	2.558	2.772	3.061
26	2.072	2.162	2.279	2.433	2.637	2.912
27	1.971	2.057	2.168	2.314	2.508	2.770
28	1.875	1.956	2.062	2.201	2.386	2.635
29	1.783	1.861	1.962	2.094	2.270	2.506
30	1.696	1.770	1.866	1.992	2.159	2.384
31	1.614	1.684	1.775	1.895	2.054	2.268
32	1.535	1.602	1.689	1.802	1.954	2.157
33	1.460	1.524	1.606	1.714	1.858	2.052
34	1.389	1.449	1.528	1.631	1.768	1.952
35	1.321	1.379	1.453	1.551	1.681	1.857
36	1.257	1.311	1.382	1.476	1.599	1.766
37	1.195	1.247	1.315	1.404	1.521	1.680
38	1.137	1.187	1.251	1.335	1.447	1.598
39	1.082	1.129	1.190	1.270	1.377	1.520
40	1.029	1.074	1.132	1.208	1.309	1.446
41	0.979	1.021	1.077	1.149	1.246	1.376
42	0.931	0.971	1.024	1.093	1.185	1.309
43	0.886	0.924	0.974	1.040	1.127	1.245
44	0.842	0.879	0.927	0.989	1.072	1.184
45	0.801	0.836	0.882	0.941	1.020	1.126
46	0.762	0.795	0.838	0.895	0.970	1.071
47	0.725	0.757	0.798	0.851	0.923	1.019
48	0.690	0.720	0.759	0.810	0.878	0.969
49	0.656	0.685	0.722	0.770	0.835	0.922
50	0.624	0.651	0.687	0.733	0.794	0.877
51	0.594	0.619	0.653	0.697	0.756	0.834
52	0.565	0.589	0.621	0.663	0.719	0.794
53	0.537	0.561	0.591	0.631	0.684	0.755
54	0.511	0.533	0.562	0.600	0.650	0.718
55	0.486	0.507	0.535	0.571	0.619	0.683
56	0.462	0.482	0.509	0.543	0.588	0.650
57	0.440	0.459	0.484	0.516	0.560	0.618
58	0.418	0.437	0.460	0.491	0.532	0.588
59	0.398	0.415	0.438	0.467	0.506	0.559
60+	0.378	0.395	0.416	0.444	0.482	0.532

C.5 甲状腺癌超额危险系数

甲状腺癌 ERR_{1GY} 值见表C.16。

表C.16 甲状腺癌 ERR_{1GY} 值

受照年龄 (e) 岁	男性	女性
15	1.841	3.647
16	1.694	3.356
17	1.559	3.089
18	1.435	2.843
19	1.321	2.616
20	1.215	2.408
21	1.119	2.216
22	1.030	2.040
23	0.948	1.877
24	0.872	1.728
25	0.803	1.590
26	0.739	1.463
27	0.680	1.347
28	0.626	1.240
29	0.576	1.141
30	0.530	1.050
31	0.488	0.966
32	0.449	0.889
33	0.413	0.819
34	0.380	0.753
35	0.350	0.693
36	0.322	0.638
37	0.296	0.587
38	0.273	0.541
39	0.251	0.497
40	0.231	0.458
41	0.213	0.421
42	0.196	0.388
43	0.180	0.357
44	0.166	0.329
45	0.153	0.302
46	0.140	0.278
47	0.129	0.256
48	0.119	0.236
49	0.109	0.217

表C. 16(续)

受照年龄 (e) 岁	男性	女性
50	0.101	0.200
51	0.093	0.184
52	0.085	0.169
53	0.079	0.156
54	0.072	0.143
55	0.067	0.132
56	0.061	0.121
57	0.056	0.112
58	0.052	0.103
59	0.048	0.095
60+	0.044	0.087

C. 6 男性除慢淋以外白血病超额危险系数

男性除慢淋以外白血病 ERR 值见表C. 17。

表C. 17 男性除慢淋以外白血病 ERR_{IGY} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁							
	16	17	18	19	20	21	22	23
15	67.421	32.702	21.391	15.796	12.464	10.255	8.689	7.524
16	—	56.638	28.333	18.876	14.125	11.264	9.354	7.989
17	—	—	47.530	24.535	16.653	12.634	10.186	8.538
18	—	—	—	39.864	21.240	14.695	11.305	9.219
19	—	—	—	—	33.430	18.389	12.973	10.124
20	—	—	—	—	—	28.036	15.929	11.460
21	—	—	—	—	—	—	23.521	13.807
22	—	—	—	—	—	—	—	19.743

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	24	25	26	27	28	29	30	31
15	6.625	5.914	5.339	4.864	4.468	4.134	3.846	3.597
16	6.967	6.175	5.545	5.034	4.610	4.255	3.953	3.694
17	7.351	6.458	5.763	5.206	4.752	4.375	4.058	3.787
18	7.801	6.773	5.995	5.385	4.895	4.493	4.158	3.875
19	8.352	7.135	6.248	5.572	5.038	4.609	4.255	3.959
20	9.075	7.572	6.534	5.771	5.185	4.722	4.346	4.035
21	10.133	8.142	6.875	5.992	5.338	4.833	4.431	4.104
22	11.975	8.967	7.314	6.250	5.501	4.943	4.511	4.164
23	16.581	10.395	7.943	6.576	5.687	5.058	4.585	4.216
24	—	13.936	9.032	7.045	5.921	5.183	4.656	4.258
25	—	—	11.721	7.854	6.254	5.337	4.729	4.292
26	—	—	—	9.865	6.837	5.558	4.817	4.321
27	—	—	—	—	8.309	5.957	4.945	4.350
28	—	—	—	—	—	7.003	5.195	4.403
29	—	—	—	—	—	—	5.908	4.535
30	—	—	—	—	—	—	—	4.985

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	32	33	34	35	36	37	38	39
15	3.381	3.190	3.020	2.868	2.729	2.603	2.486	2.376
16	3.469	3.272	3.097	2.941	2.799	2.670	2.549	2.438
17	3.553	3.349	3.168	3.008	2.864	2.732	2.612	2.498
18	3.632	3.422	3.237	3.073	2.925	2.792	2.669	2.554
19	3.706	3.489	3.300	3.132	2.982	2.847	2.722	2.607
20	3.773	3.549	3.355	3.185	3.033	2.896	2.771	2.655
21	3.831	3.601	3.402	3.229	3.076	2.939	2.813	2.696
22	3.881	3.643	3.440	3.265	3.111	2.973	2.847	2.731
23	3.919	3.674	3.467	3.290	3.135	2.998	2.873	2.758
24	3.945	3.692	3.482	3.303	3.149	3.012	2.889	2.775
25	3.959	3.696	3.482	3.302	3.149	3.014	2.894	2.783
26	3.961	3.686	3.466	3.287	3.134	3.002	2.885	2.779
27	3.951	3.659	3.434	3.253	3.104	2.976	2.863	2.761
28	3.935	3.618	3.384	3.202	3.055	2.932	2.825	2.728
29	3.925	3.562	3.314	3.131	2.987	2.869	2.769	2.680
30	3.961	3.502	3.227	3.038	2.898	2.787	2.695	2.613
31	4.982	3.960	3.502	3.227	3.038	2.896	2.783	2.687
32	—	4.981	3.960	3.502	3.226	3.036	2.891	2.775
33	—	—	4.981	3.959	3.501	3.224	3.031	2.884
34	—	—	—	4.981	3.959	3.499	3.220	3.024
35	—	—	—	—	4.980	3.957	3.495	3.212
36	—	—	—	—	—	4.978	3.952	3.487
37	—	—	—	—	—	—	4.974	3.945
38	—	—	—	—	—	—	—	4.966

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	40	41	42	43	44	45	46	47
15	2.273	2.175	2.081	1.989	1.902	1.816	1.732	1.652
16	2.334	2.233	2.137	2.044	1.953	1.865	1.780	1.697
17	2.391	2.289	2.191	2.096	2.005	1.914	1.827	1.742
18	2.445	2.343	2.244	2.147	2.053	1.962	1.873	1.786
19	2.497	2.393	2.293	2.196	2.101	2.007	1.917	1.828
20	2.545	2.440	2.338	2.241	2.144	2.051	1.959	1.869
21	2.586	2.481	2.380	2.282	2.185	2.091	1.998	1.906
22	2.622	2.518	2.417	2.318	2.222	2.127	2.034	1.943
23	2.650	2.547	2.448	2.350	2.254	2.159	2.065	1.974
24	2.670	2.568	2.471	2.374	2.279	2.186	2.094	2.001
25	2.680	2.581	2.486	2.392	2.299	2.207	2.115	2.024
26	2.680	2.584	2.492	2.401	2.311	2.221	2.132	2.041
27	2.665	2.575	2.488	2.401	2.314	2.227	2.140	2.053
28	2.640	2.555	2.472	2.390	2.308	2.224	2.140	2.056
29	2.598	2.520	2.444	2.368	2.291	2.213	2.132	2.052
30	2.540	2.470	2.402	2.333	2.262	2.190	2.115	2.039
31	2.602	2.524	2.448	2.374	2.299	2.223	2.145	2.066
32	2.675	2.585	2.502	2.420	2.340	2.260	2.178	2.096
33	2.764	2.659	2.563	2.474	2.387	2.301	2.215	2.129
34	2.872	2.747	2.637	2.536	2.440	2.347	2.257	2.166
35	3.012	2.855	2.725	2.609	2.502	2.401	2.303	2.208
36	3.200	2.995	2.834	2.697	2.576	2.463	2.357	2.254
37	3.475	3.184	2.974	2.806	2.664	2.536	2.418	2.308
38	3.933	3.459	3.162	2.946	2.772	2.624	2.492	2.369
39	4.955	3.917	3.437	3.134	2.912	2.733	2.580	2.443
40	—	4.938	3.895	3.409	3.101	2.873	2.688	2.531
41	—	—	4.916	3.867	3.376	3.061	2.828	2.640
42	—	—	—	4.888	3.833	3.336	3.017	2.780
43	—	—	—	—	4.855	3.794	3.292	2.968
44	—	—	—	—	—	4.815	3.750	3.243
45	—	—	—	—	—	—	4.771	3.701
46	—	—	—	—	—	—	—	4.722

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	48	49	50	51	52	53	54	55
15	1.574	1.500	1.429	1.361	1.297	1.237	1.181	1.129
16	1.617	1.541	1.467	1.397	1.332	1.270	1.211	1.158
17	1.660	1.581	1.506	1.434	1.366	1.302	1.241	1.186
18	1.702	1.621	1.543	1.470	1.400	1.334	1.272	1.214
19	1.743	1.659	1.580	1.504	1.432	1.364	1.301	1.242
20	1.782	1.697	1.616	1.538	1.465	1.395	1.329	1.269
21	1.818	1.733	1.650	1.570	1.496	1.425	1.357	1.295
22	1.852	1.766	1.682	1.601	1.524	1.452	1.384	1.320
23	1.883	1.796	1.711	1.630	1.552	1.478	1.409	1.344
24	1.911	1.823	1.738	1.656	1.577	1.502	1.432	1.367
25	1.934	1.846	1.761	1.679	1.599	1.524	1.453	1.387
26	1.952	1.866	1.780	1.698	1.618	1.543	1.472	1.404
27	1.965	1.879	1.795	1.713	1.634	1.559	1.488	1.421
28	1.971	1.888	1.805	1.724	1.646	1.572	1.501	1.433
29	1.970	1.888	1.808	1.729	1.653	1.579	1.509	1.443
30	1.961	1.883	1.805	1.729	1.655	1.583	1.514	1.448
31	1.987	1.906	1.827	1.749	1.673	1.600	1.530	1.464
32	2.014	1.932	1.850	1.770	1.693	1.618	1.547	1.480
33	2.044	1.959	1.875	1.794	1.714	1.638	1.566	1.497
34	2.077	1.989	1.903	1.819	1.737	1.660	1.585	1.515
35	2.114	2.022	1.933	1.846	1.763	1.683	1.607	1.535
36	2.155	2.059	1.966	1.876	1.790	1.708	1.630	1.557
37	2.201	2.100	2.003	1.909	1.820	1.735	1.655	1.580
38	2.255	2.147	2.044	1.946	1.853	1.765	1.683	1.605
39	2.317	2.200	2.090	1.987	1.890	1.798	1.713	1.632
40	2.390	2.262	2.144	2.034	1.931	1.835	1.746	1.662
41	2.479	2.336	2.206	2.088	1.978	1.877	1.783	1.695
42	2.587	2.424	2.279	2.149	2.031	1.923	1.824	1.732
43	2.727	2.532	2.367	2.223	2.093	1.977	1.870	1.774
44	2.915	2.672	2.476	2.311	2.167	2.038	1.924	1.820
45	3.191	2.861	2.616	2.419	2.255	2.112	1.986	1.874
46	3.648	3.136	2.804	2.559	2.363	2.200	2.059	1.935
47	4.670	3.593	3.079	2.748	2.503	2.309	2.147	2.009
48	—	4.615	3.537	3.023	2.692	2.449	2.256	2.097
49	—	—	4.558	3.481	2.967	2.637	2.396	2.206
50	—	—	—	4.502	3.424	2.912	2.584	2.346
51	—	—	—	—	4.446	3.370	2.859	2.534
52	—	—	—	—	—	4.391	3.317	2.809
53	—	—	—	—	—	—	4.338	3.267
54	—	—	—	—	—	—	—	4.288

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	56	57	58	59	60	61	62	63
15	1.079	1.034	0.992	0.953	0.917	0.884	0.853	0.824
16	1.107	1.060	1.017	0.976	0.939	0.904	0.872	0.842
17	1.134	1.085	1.041	0.999	0.961	0.925	0.892	0.861
18	1.160	1.111	1.064	1.022	0.982	0.946	0.911	0.880
19	1.187	1.135	1.087	1.044	1.003	0.966	0.931	0.898
20	1.212	1.159	1.111	1.066	1.024	0.985	0.950	0.916
21	1.237	1.183	1.133	1.087	1.044	1.004	0.968	0.934
22	1.261	1.206	1.155	1.107	1.063	1.023	0.986	0.952
23	1.284	1.227	1.175	1.127	1.083	1.041	1.003	0.968
24	1.305	1.248	1.195	1.146	1.100	1.059	1.020	0.984
25	1.324	1.267	1.213	1.163	1.117	1.075	1.035	0.999
26	1.342	1.284	1.229	1.179	1.133	1.090	1.050	1.013
27	1.358	1.299	1.244	1.194	1.146	1.103	1.063	1.026
28	1.370	1.312	1.257	1.205	1.159	1.115	1.075	1.038
29	1.380	1.322	1.267	1.216	1.169	1.125	1.085	1.048
30	1.386	1.328	1.275	1.224	1.177	1.134	1.094	1.057
31	1.401	1.342	1.287	1.236	1.189	1.145	1.104	1.067
32	1.416	1.356	1.300	1.249	1.201	1.156	1.115	1.077
33	1.432	1.372	1.315	1.262	1.214	1.169	1.127	1.088
34	1.450	1.388	1.331	1.277	1.227	1.181	1.139	1.100
35	1.468	1.405	1.347	1.292	1.242	1.195	1.152	1.112
36	1.488	1.424	1.364	1.308	1.257	1.209	1.165	1.125
37	1.509	1.443	1.382	1.326	1.273	1.225	1.180	1.138
38	1.532	1.465	1.402	1.344	1.291	1.241	1.195	1.153
39	1.558	1.488	1.424	1.364	1.309	1.258	1.211	1.168
40	1.585	1.513	1.447	1.385	1.329	1.277	1.229	1.184
41	1.615	1.541	1.472	1.409	1.350	1.296	1.247	1.202
42	1.648	1.571	1.499	1.434	1.373	1.318	1.267	1.220
43	1.685	1.604	1.529	1.461	1.399	1.341	1.288	1.240
44	1.726	1.641	1.562	1.491	1.426	1.366	1.311	1.261
45	1.773	1.682	1.599	1.524	1.456	1.394	1.337	1.284
46	1.826	1.728	1.641	1.561	1.489	1.424	1.364	1.310
47	1.888	1.782	1.687	1.602	1.526	1.457	1.394	1.337
48	1.962	1.844	1.741	1.649	1.567	1.494	1.427	1.367
49	2.050	1.917	1.802	1.703	1.613	1.535	1.464	1.400
50	2.158	2.005	1.876	1.764	1.667	1.581	1.505	1.437
51	2.298	2.114	1.964	1.838	1.729	1.635	1.552	1.478
52	2.487	2.254	2.073	1.926	1.802	1.697	1.605	1.524
53	2.762	2.442	2.213	2.034	1.891	1.770	1.667	1.578
54	3.219	2.717	2.401	2.174	1.999	1.858	1.741	1.640
55	4.241	3.175	2.676	2.363	2.139	1.967	1.829	1.713
56	—	4.196	3.134	2.638	2.327	2.107	1.937	1.802
57	—	—	4.155	3.096	2.603	2.295	2.077	1.910
58	—	—	—	4.117	3.060	2.570	2.266	2.050
59	—	—	—	—	4.082	3.028	2.541	2.238
60+	—	—	—	—	—	4.049	2.998	2.514

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	64	65	66	67	68	69	70	71
15	0.797	0.772	0.748	0.726	0.706	0.687	0.668	0.652
16	0.814	0.789	0.765	0.742	0.722	0.702	0.684	0.667
17	0.833	0.806	0.782	0.759	0.737	0.718	0.699	0.682
18	0.851	0.824	0.799	0.775	0.753	0.733	0.714	0.696
19	0.869	0.841	0.815	0.791	0.769	0.748	0.729	0.711
20	0.886	0.858	0.831	0.807	0.784	0.763	0.743	0.725
21	0.903	0.874	0.847	0.822	0.799	0.778	0.757	0.739
22	0.919	0.890	0.863	0.838	0.814	0.792	0.772	0.753
23	0.935	0.905	0.878	0.852	0.828	0.806	0.785	0.766
24	0.951	0.921	0.893	0.866	0.842	0.819	0.799	0.779
25	0.966	0.934	0.906	0.879	0.855	0.833	0.812	0.792
26	0.979	0.948	0.919	0.893	0.867	0.845	0.824	0.804
27	0.992	0.960	0.931	0.905	0.880	0.857	0.835	0.815
28	1.004	0.972	0.943	0.915	0.891	0.867	0.846	0.827
29	1.013	0.982	0.953	0.926	0.901	0.878	0.856	0.837
30	1.022	0.991	0.962	0.935	0.910	0.887	0.866	0.846
31	1.032	1.000	0.971	0.943	0.918	0.895	0.874	0.854
32	1.042	1.010	0.980	0.952	0.926	0.903	0.881	0.861
33	1.053	1.020	0.990	0.961	0.935	0.911	0.889	0.869
34	1.064	1.030	0.999	0.971	0.944	0.920	0.897	0.877
35	1.075	1.041	1.010	0.981	0.954	0.929	0.907	0.885
36	1.088	1.053	1.021	0.991	0.964	0.939	0.916	0.894
37	1.100	1.065	1.032	1.003	0.975	0.949	0.925	0.903
38	1.113	1.078	1.045	1.014	0.986	0.959	0.935	0.913
39	1.128	1.091	1.057	1.026	0.997	0.971	0.946	0.923
40	1.144	1.106	1.071	1.039	1.010	0.982	0.957	0.933
41	1.160	1.121	1.085	1.052	1.022	0.994	0.968	0.945
42	1.177	1.137	1.101	1.067	1.035	1.007	0.981	0.956
43	1.195	1.155	1.117	1.082	1.050	1.020	0.993	0.968
44	1.215	1.173	1.134	1.098	1.066	1.035	1.007	0.981
45	1.237	1.193	1.153	1.116	1.082	1.050	1.021	0.994
46	1.260	1.214	1.172	1.134	1.099	1.067	1.037	1.009
47	1.285	1.237	1.194	1.154	1.117	1.084	1.053	1.024
48	1.312	1.263	1.217	1.175	1.137	1.102	1.070	1.040
49	1.342	1.290	1.242	1.199	1.159	1.122	1.089	1.058
50	1.375	1.320	1.270	1.224	1.182	1.144	1.108	1.076
51	1.412	1.353	1.300	1.251	1.207	1.167	1.130	1.096
52	1.454	1.390	1.333	1.281	1.234	1.192	1.153	1.117
53	1.500	1.431	1.370	1.314	1.264	1.219	1.178	1.141
54	1.554	1.477	1.411	1.351	1.297	1.249	1.205	1.166
55	1.615	1.531	1.457	1.392	1.334	1.282	1.236	1.193
56	1.689	1.593	1.511	1.439	1.376	1.319	1.268	1.223
57	1.777	1.666	1.573	1.493	1.422	1.361	1.306	1.256
58	1.886	1.755	1.646	1.554	1.476	1.407	1.347	1.293
59	2.026	1.863	1.734	1.628	1.537	1.461	1.393	1.334
60+	2.214	2.003	1.843	1.716	1.611	1.522	1.447	1.381

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	72	73	74	75	76	77	78	79
15	0.636	0.621	0.607	0.593	0.581	0.568	0.557	0.546
16	0.651	0.635	0.621	0.607	0.594	0.582	0.571	0.560
17	0.665	0.649	0.634	0.621	0.608	0.596	0.584	0.573
18	0.679	0.663	0.649	0.634	0.622	0.609	0.597	0.586
19	0.694	0.677	0.663	0.648	0.635	0.622	0.611	0.600
20	0.707	0.691	0.676	0.662	0.648	0.636	0.624	0.613
21	0.721	0.705	0.689	0.675	0.662	0.649	0.637	0.626
22	0.734	0.718	0.702	0.688	0.675	0.662	0.650	0.639
23	0.748	0.731	0.716	0.701	0.688	0.675	0.663	0.652
24	0.761	0.744	0.728	0.714	0.700	0.687	0.676	0.664
25	0.773	0.757	0.740	0.726	0.712	0.700	0.688	0.677
26	0.786	0.768	0.753	0.738	0.725	0.712	0.700	0.689
27	0.797	0.780	0.764	0.750	0.736	0.724	0.712	0.701
28	0.808	0.791	0.776	0.761	0.748	0.735	0.724	0.713
29	0.819	0.801	0.786	0.772	0.758	0.746	0.735	0.724
30	0.828	0.811	0.796	0.782	0.769	0.756	0.745	0.735
31	0.835	0.818	0.802	0.788	0.775	0.762	0.751	0.741
32	0.842	0.825	0.809	0.795	0.781	0.769	0.757	0.746
33	0.850	0.832	0.816	0.802	0.787	0.775	0.763	0.753
34	0.858	0.840	0.823	0.808	0.794	0.781	0.770	0.759
35	0.866	0.848	0.831	0.816	0.801	0.788	0.776	0.765
36	0.874	0.856	0.839	0.823	0.808	0.795	0.783	0.772
37	0.883	0.864	0.847	0.831	0.816	0.802	0.789	0.779
38	0.892	0.873	0.855	0.839	0.824	0.810	0.797	0.785
39	0.902	0.882	0.864	0.847	0.832	0.818	0.805	0.793
40	0.912	0.892	0.873	0.856	0.840	0.825	0.812	0.800
41	0.922	0.902	0.883	0.865	0.849	0.834	0.820	0.808
42	0.933	0.912	0.893	0.875	0.858	0.843	0.829	0.816
43	0.945	0.923	0.903	0.885	0.868	0.852	0.838	0.824
44	0.957	0.935	0.914	0.895	0.878	0.862	0.847	0.833
45	0.970	0.947	0.926	0.907	0.888	0.872	0.857	0.842
46	0.983	0.960	0.938	0.918	0.899	0.882	0.866	0.852
47	0.998	0.973	0.951	0.930	0.911	0.893	0.877	0.862
48	1.013	0.988	0.964	0.943	0.923	0.905	0.888	0.872
49	1.029	1.003	0.979	0.956	0.936	0.917	0.899	0.884
50	1.047	1.019	0.994	0.971	0.949	0.930	0.912	0.895
51	1.065	1.037	1.010	0.986	0.964	0.943	0.924	0.907
52	1.085	1.055	1.028	1.002	0.979	0.958	0.938	0.920
53	1.106	1.075	1.046	1.020	0.995	0.973	0.952	0.933
54	1.129	1.096	1.066	1.038	1.013	0.989	0.968	0.948
55	1.155	1.119	1.087	1.058	1.031	1.007	0.984	0.963
56	1.182	1.145	1.110	1.079	1.051	1.025	1.001	0.979
57	1.212	1.172	1.136	1.103	1.072	1.045	1.020	0.997
58	1.245	1.202	1.163	1.128	1.095	1.066	1.039	1.015
59	1.282	1.235	1.193	1.155	1.121	1.089	1.061	1.035
60+	1.323	1.272	1.226	1.185	1.148	1.115	1.084	1.056

表C. 17 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁				
	80	81	82	83	84+
15	0.536	0.526	0.518	0.509	0.501
16	0.550	0.540	0.531	0.522	0.514
17	0.563	0.553	0.544	0.535	0.527
18	0.576	0.566	0.557	0.548	0.541
19	0.589	0.579	0.570	0.562	0.554
20	0.602	0.592	0.584	0.575	0.567
21	0.616	0.606	0.596	0.588	0.580
22	0.628	0.619	0.610	0.602	0.594
23	0.641	0.632	0.623	0.615	0.608
24	0.654	0.645	0.636	0.628	0.621
25	0.667	0.657	0.649	0.641	0.634
26	0.679	0.670	0.661	0.654	0.647
27	0.692	0.683	0.674	0.667	0.661
28	0.703	0.695	0.687	0.680	0.674
29	0.715	0.706	0.699	0.693	0.687
30	0.727	0.718	0.711	0.705	0.700
31	0.731	0.724	0.716	0.710	0.705
32	0.737	0.729	0.722	0.715	0.710
33	0.743	0.734	0.727	0.720	0.715
34	0.749	0.740	0.732	0.725	0.720
35	0.755	0.746	0.738	0.731	0.725
36	0.762	0.752	0.744	0.737	0.731
37	0.768	0.759	0.750	0.743	0.736
38	0.775	0.765	0.757	0.749	0.743
39	0.781	0.772	0.763	0.755	0.749
40	0.789	0.778	0.770	0.762	0.755
41	0.797	0.786	0.776	0.769	0.762
42	0.804	0.794	0.784	0.775	0.769
43	0.812	0.801	0.792	0.783	0.775
44	0.820	0.809	0.799	0.790	0.783
45	0.829	0.817	0.807	0.798	0.790
46	0.839	0.827	0.815	0.806	0.798
47	0.848	0.836	0.825	0.814	0.806
48	0.858	0.845	0.834	0.823	0.814
49	0.869	0.855	0.843	0.832	0.823
50	0.880	0.866	0.853	0.842	0.832
51	0.891	0.877	0.864	0.852	0.842
52	0.904	0.888	0.875	0.863	0.852
53	0.916	0.901	0.886	0.874	0.862
54	0.930	0.913	0.899	0.885	0.874
55	0.944	0.927	0.911	0.898	0.885
56	0.960	0.941	0.925	0.910	0.897
57	0.976	0.957	0.939	0.923	0.910
58	0.993	0.973	0.955	0.938	0.923
59	1.011	0.990	0.971	0.954	0.938
60+	1.031	1.009	0.988	0.970	0.953

C. 7女性除慢淋以外白血病超额危险系数

女性除慢淋以外白血病超额危险系数见表C. 18。

表C. 18女性除慢淋以外白血病 ERR_{IGY} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁							
	16	17	18	19	20	21	22	23
15	68.858	33.350	21.876	16.220	12.846	10.604	9.003	7.800
16	—	58.208	29.078	19.413	14.571	11.650	9.687	8.276
17	—	—	49.138	25.317	17.206	13.075	10.553	8.844
18	—	—	—	41.429	22.017	15.233	11.721	9.553
19	—	—	—	—	34.888	19.126	13.474	10.499
20	—	—	—	—	—	29.351	16.599	11.907
21	—	—	—	—	—	—	24.671	14.394
22	—	—	—	—	—	—	—	20.725

表C. 18 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁							
	24	25	26	27	28	29	30	31
15	6.863	6.113	5.499	4.986	4.554	4.184	3.863	3.582
16	7.211	6.375	5.705	5.152	4.691	4.298	3.960	3.667
17	7.604	6.663	5.922	5.323	4.828	4.410	4.056	3.750
18	8.068	6.985	6.156	5.500	4.967	4.523	4.148	3.829
19	8.642	7.358	6.414	5.686	5.106	4.633	4.238	3.901
20	9.400	7.814	6.708	5.887	5.251	4.741	4.321	3.970
21	10.518	8.411	7.062	6.114	5.404	4.849	4.402	4.031
22	12.475	9.285	7.523	6.383	5.571	4.959	4.478	4.086
23	17.399	10.806	8.193	6.727	5.766	5.076	4.550	4.135
24	—	14.601	9.358	7.227	6.014	5.208	4.624	4.176
25	—	—	12.249	8.101	6.375	5.375	4.703	4.213
26	—	—	—	10.273	7.009	5.621	4.803	4.248
27	—	—	—	—	8.614	6.065	4.955	4.293
28	—	—	—	—	—	7.223	5.248	4.368
29	—	—	—	—	—	—	6.054	4.539
30	—	—	—	—	—	—	—	5.074

表C. 18 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁							
	32	33	34	35	36	37	38	39
15	3.334	3.115	2.919	2.743	2.584	2.440	2.309	2.188
16	3.410	3.183	2.982	2.799	2.636	2.488	2.353	2.230
17	3.482	3.248	3.039	2.852	2.685	2.533	2.396	2.270
18	3.551	3.308	3.093	2.901	2.730	2.576	2.434	2.306
19	3.613	3.362	3.141	2.946	2.770	2.613	2.470	2.340
20	3.670	3.411	3.184	2.983	2.804	2.645	2.499	2.368
21	3.720	3.452	3.219	3.015	2.833	2.671	2.525	2.391
22	3.761	3.484	3.247	3.038	2.854	2.690	2.544	2.410
23	3.793	3.508	3.264	3.053	2.867	2.703	2.554	2.421
24	3.817	3.522	3.272	3.058	2.871	2.706	2.559	2.425
25	3.831	3.524	3.269	3.052	2.864	2.699	2.553	2.421
26	3.837	3.514	3.253	3.033	2.846	2.682	2.538	2.408
27	3.835	3.493	3.224	3.002	2.815	2.653	2.512	2.385
28	3.835	3.463	3.182	2.957	2.771	2.612	2.474	2.351
29	3.850	3.426	3.126	2.897	2.711	2.557	2.423	2.306
30	3.926	3.393	3.060	2.821	2.637	2.486	2.359	2.247
31	5.040	3.892	3.359	3.027	2.789	2.605	2.454	2.327
32	—	5.007	3.859	3.327	2.995	2.757	2.573	2.423
33	—	—	4.974	3.827	3.294	2.963	2.725	2.542
34	—	—	—	4.941	3.794	3.262	2.931	2.694
35	—	—	—	—	4.909	3.762	3.231	2.900
36	—	—	—	—	—	4.877	3.731	3.199
37	—	—	—	—	—	—	4.845	3.699
38	—	—	—	—	—	—	—	4.814

表C.18 (续)

受照年龄(<i>e</i>) 岁	患癌年龄(<i>e+t</i>) 岁							
	40	41	42	43	44	45	46	47
15	2.077	1.974	1.880	1.792	1.711	1.635	1.564	1.498
16	2.117	2.013	1.916	1.826	1.743	1.667	1.594	1.527
17	2.155	2.048	1.950	1.859	1.774	1.696	1.622	1.554
18	2.189	2.081	1.982	1.889	1.804	1.724	1.650	1.579
19	2.221	2.111	2.010	1.916	1.829	1.749	1.674	1.603
20	2.248	2.137	2.035	1.941	1.853	1.772	1.696	1.625
21	2.271	2.160	2.057	1.962	1.874	1.792	1.716	1.644
22	2.288	2.176	2.074	1.979	1.891	1.809	1.733	1.661
23	2.300	2.188	2.086	1.992	1.904	1.822	1.746	1.675
24	2.305	2.195	2.093	1.999	1.912	1.831	1.756	1.685
25	2.302	2.193	2.093	2.001	1.915	1.835	1.761	1.691
26	2.291	2.185	2.086	1.996	1.912	1.834	1.761	1.693
27	2.272	2.168	2.073	1.985	1.904	1.827	1.757	1.690
28	2.242	2.142	2.050	1.966	1.888	1.814	1.746	1.682
29	2.201	2.105	2.019	1.938	1.865	1.794	1.729	1.667
30	2.148	2.059	1.978	1.902	1.832	1.766	1.705	1.647
31	2.216	2.118	2.029	1.948	1.872	1.803	1.738	1.677
32	2.296	2.185	2.087	1.999	1.918	1.843	1.774	1.709
33	2.392	2.265	2.155	2.057	1.969	1.888	1.814	1.746
34	2.511	2.361	2.235	2.125	2.027	1.939	1.859	1.785
35	2.663	2.480	2.331	2.204	2.095	1.997	1.910	1.831
36	2.869	2.632	2.450	2.300	2.175	2.065	1.969	1.882
37	3.168	2.838	2.601	2.419	2.271	2.145	2.036	1.940
38	3.668	3.137	2.807	2.571	2.390	2.241	2.116	2.008
39	4.782	3.637	3.107	2.777	2.541	2.360	2.212	2.088
40	—	—	—	—	—	2.512	2.331	2.184
41	—	—	—	—	—	2.718	2.483	2.303
42	—	—	—	—	—	3.017	2.689	2.455
43	—	—	—	—	—	3.517	2.988	2.660
44	—	—	—	—	—	4.632	3.488	2.960
45	—	—	—	—	—	—	4.603	3.460
46	—	—	—	—	—	—	—	4.574

表C.18 (续)

受照年龄(e) 岁	患癌年龄(e+t) 岁							
	48	49	50	51	52	53	54	55
15	1.437	1.378	1.324	1.273	1.225	1.181	1.138	1.099
16	1.464	1.405	1.350	1.298	1.249	1.203	1.160	1.120
17	1.490	1.430	1.373	1.321	1.271	1.224	1.181	1.140
18	1.515	1.453	1.396	1.343	1.293	1.246	1.202	1.160
19	1.538	1.476	1.418	1.365	1.313	1.266	1.220	1.179
20	1.559	1.496	1.438	1.384	1.333	1.284	1.238	1.195
21	1.578	1.516	1.457	1.401	1.350	1.302	1.255	1.213
22	1.595	1.531	1.473	1.418	1.366	1.317	1.271	1.228
23	1.608	1.545	1.487	1.431	1.379	1.331	1.285	1.241
24	1.618	1.556	1.497	1.443	1.391	1.342	1.296	1.253
25	1.625	1.564	1.506	1.452	1.400	1.351	1.306	1.263
26	1.628	1.568	1.511	1.457	1.407	1.359	1.314	1.271
27	1.627	1.568	1.512	1.459	1.410	1.363	1.318	1.276
28	1.620	1.563	1.509	1.458	1.410	1.364	1.321	1.279
29	1.609	1.554	1.502	1.452	1.406	1.361	1.319	1.279
30	1.592	1.540	1.490	1.443	1.398	1.355	1.315	1.276
31	1.619	1.565	1.513	1.465	1.418	1.374	1.332	1.293
32	1.649	1.592	1.538	1.488	1.440	1.394	1.351	1.310
33	1.681	1.622	1.566	1.513	1.463	1.416	1.371	1.329
34	1.718	1.654	1.596	1.540	1.488	1.439	1.393	1.350
35	1.758	1.691	1.628	1.570	1.515	1.464	1.416	1.371
36	1.803	1.731	1.664	1.602	1.546	1.492	1.441	1.394
37	1.854	1.776	1.704	1.639	1.578	1.522	1.469	1.420
38	1.912	1.827	1.750	1.679	1.614	1.554	1.499	1.447
39	1.980	1.885	1.801	1.724	1.654	1.590	1.531	1.477
40	2.060	1.953	1.859	1.775	1.700	1.630	1.567	1.509
41	2.156	2.033	1.927	1.833	1.751	1.676	1.607	1.546
42	2.275	2.129	2.007	1.901	1.809	1.727	1.653	1.585
43	2.427	2.248	2.103	1.981	1.877	1.785	1.704	1.631
44	2.633	2.400	2.222	2.077	1.956	1.853	1.762	1.682
45	2.932	2.606	2.373	2.196	2.052	1.933	1.830	1.740
46	3.432	2.905	2.579	2.348	2.171	2.029	1.910	1.808
47	4.547	3.405	2.879	2.554	2.323	2.148	2.006	1.888
48	—	4.519	3.379	2.853	2.529	2.299	2.125	1.984
49	—	—	4.493	3.353	2.829	2.505	2.277	2.103
50	—	—	—	4.468	3.328	2.805	2.482	2.255
51	—	—	—	—	4.443	3.305	2.782	2.460
52	—	—	—	—	—	4.419	3.282	2.760
53	—	—	—	—	—	—	4.396	3.260
54	—	—	—	—	—	—	—	4.374

表C.18 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	56	57	58	59	60	61	62	63
15	1.061	1.026	0.993	0.961	0.932	0.904	0.877	0.852
16	1.082	1.046	1.012	0.980	0.950	0.921	0.894	0.869
17	1.101	1.065	1.030	0.998	0.967	0.939	0.911	0.886
18	1.120	1.083	1.048	1.016	0.984	0.955	0.928	0.902
19	1.139	1.101	1.066	1.033	1.001	0.971	0.944	0.917
20	1.155	1.118	1.082	1.049	1.017	0.987	0.958	0.932
21	1.172	1.134	1.098	1.064	1.032	1.002	0.973	0.946
22	1.187	1.149	1.112	1.078	1.046	1.016	0.987	0.960
23	1.201	1.162	1.126	1.091	1.059	1.028	1.000	0.973
24	1.212	1.174	1.138	1.103	1.071	1.041	1.012	0.985
25	1.223	1.184	1.148	1.114	1.082	1.051	1.022	0.995
26	1.230	1.193	1.157	1.123	1.091	1.060	1.032	1.005
27	1.237	1.199	1.164	1.130	1.098	1.069	1.040	1.014
28	1.240	1.204	1.169	1.136	1.105	1.075	1.047	1.020
29	1.242	1.205	1.171	1.139	1.108	1.080	1.052	1.026
30	1.240	1.204	1.171	1.140	1.110	1.082	1.056	1.030
31	1.255	1.220	1.185	1.153	1.123	1.094	1.067	1.041
32	1.272	1.235	1.201	1.167	1.136	1.107	1.079	1.052
33	1.289	1.252	1.216	1.183	1.150	1.120	1.091	1.064
34	1.308	1.269	1.233	1.198	1.165	1.134	1.105	1.077
35	1.329	1.288	1.250	1.215	1.181	1.149	1.119	1.090
36	1.350	1.309	1.269	1.232	1.198	1.165	1.134	1.104
37	1.373	1.330	1.290	1.251	1.215	1.181	1.149	1.120
38	1.399	1.353	1.311	1.271	1.234	1.199	1.166	1.135
39	1.426	1.379	1.334	1.293	1.254	1.218	1.184	1.152
40	1.456	1.406	1.360	1.316	1.276	1.238	1.203	1.169
41	1.488	1.436	1.387	1.341	1.299	1.260	1.223	1.188
42	1.525	1.468	1.417	1.369	1.324	1.283	1.245	1.208
43	1.564	1.505	1.449	1.399	1.352	1.308	1.268	1.230
44	1.610	1.544	1.486	1.431	1.382	1.335	1.293	1.253
45	1.661	1.590	1.525	1.467	1.414	1.366	1.320	1.278
46	1.719	1.641	1.571	1.507	1.450	1.398	1.350	1.306
47	1.787	1.699	1.622	1.553	1.490	1.434	1.382	1.336
48	1.867	1.767	1.680	1.604	1.536	1.474	1.419	1.368
49	1.963	1.847	1.748	1.662	1.587	1.520	1.459	1.404
50	2.082	1.943	1.828	1.730	1.645	1.571	1.504	1.444
51	2.234	2.062	1.924	1.810	1.713	1.629	1.555	1.490
52	2.439	2.214	2.043	1.906	1.793	1.697	1.613	1.541
53	2.739	2.419	2.195	2.025	1.889	1.776	1.681	1.599
54	3.239	2.719	2.400	2.177	2.008	1.872	1.761	1.667
55	4.353	3.219	2.700	2.382	2.159	1.991	1.857	1.747
56	—	4.333	3.200	2.682	2.365	2.143	1.976	1.843
57	—	—	4.314	3.182	2.665	2.349	2.128	1.962
58	—	—	—	4.296	3.165	2.649	2.334	2.114
59	—	—	—	—	4.279	3.148	2.633	2.319
60+	—	—	—	—	—	4.263	3.133	2.619

表C. 18 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	64	65	66	67	68	69	70	71
15	0.829	0.806	0.785	0.765	0.746	0.727	0.710	0.693
16	0.845	0.823	0.801	0.780	0.761	0.743	0.725	0.708
17	0.861	0.838	0.816	0.795	0.776	0.757	0.740	0.722
18	0.877	0.854	0.832	0.810	0.790	0.772	0.753	0.737
19	0.892	0.868	0.846	0.825	0.805	0.786	0.768	0.751
20	0.907	0.883	0.860	0.839	0.819	0.799	0.781	0.764
21	0.921	0.897	0.874	0.852	0.832	0.813	0.795	0.777
22	0.934	0.910	0.887	0.866	0.845	0.826	0.807	0.790
23	0.947	0.923	0.900	0.878	0.857	0.838	0.820	0.802
24	0.959	0.935	0.911	0.890	0.870	0.850	0.831	0.814
25	0.969	0.946	0.923	0.901	0.880	0.861	0.842	0.825
26	0.980	0.956	0.932	0.911	0.890	0.871	0.853	0.835
27	0.988	0.965	0.941	0.921	0.900	0.881	0.863	0.846
28	0.995	0.972	0.950	0.929	0.908	0.889	0.871	0.854
29	1.002	0.978	0.957	0.936	0.916	0.897	0.880	0.863
30	1.006	0.983	0.962	0.941	0.922	0.903	0.887	0.870
31	1.016	0.993	0.971	0.950	0.931	0.913	0.894	0.878
32	1.028	1.004	0.981	0.960	0.940	0.921	0.903	0.886
33	1.039	1.015	0.992	0.970	0.950	0.930	0.912	0.895
34	1.051	1.026	1.003	0.980	0.959	0.940	0.921	0.903
35	1.063	1.038	1.014	0.992	0.970	0.950	0.931	0.912
36	1.077	1.051	1.026	1.003	0.981	0.960	0.941	0.922
37	1.091	1.064	1.039	1.015	0.992	0.971	0.951	0.932
38	1.106	1.078	1.052	1.027	1.004	0.983	0.962	0.942
39	1.121	1.093	1.066	1.041	1.017	0.994	0.973	0.954
40	1.138	1.109	1.081	1.055	1.030	1.007	0.985	0.965
41	1.156	1.125	1.097	1.070	1.044	1.020	0.998	0.977
42	1.175	1.143	1.113	1.085	1.060	1.034	1.011	0.989
43	1.195	1.162	1.131	1.102	1.075	1.050	1.025	1.003
44	1.217	1.182	1.150	1.120	1.092	1.065	1.041	1.017
45	1.240	1.204	1.170	1.139	1.109	1.082	1.056	1.032
46	1.265	1.227	1.192	1.159	1.128	1.099	1.073	1.047
47	1.292	1.252	1.215	1.181	1.148	1.118	1.090	1.064
48	1.322	1.279	1.240	1.204	1.170	1.139	1.109	1.082
49	1.354	1.310	1.267	1.229	1.193	1.160	1.130	1.101
50	1.391	1.342	1.298	1.256	1.218	1.183	1.151	1.121
51	1.431	1.378	1.330	1.286	1.246	1.209	1.174	1.143
52	1.476	1.418	1.366	1.319	1.276	1.236	1.200	1.166
53	1.527	1.464	1.406	1.355	1.308	1.266	1.227	1.191
54	1.585	1.515	1.452	1.395	1.344	1.298	1.257	1.218
55	1.653	1.573	1.503	1.440	1.384	1.335	1.289	1.248
56	1.733	1.641	1.561	1.491	1.430	1.375	1.326	1.281
57	1.829	1.720	1.629	1.550	1.481	1.420	1.365	1.317
58	1.948	1.816	1.708	1.617	1.539	1.471	1.411	1.357
59	2.100	1.935	1.804	1.697	1.607	1.529	1.462	1.402
60+	2.306	2.087	1.923	1.793	1.687	1.597	1.520	1.453

表C.18 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁							
	72	73	74	75	76	77	78	79
15	0.678	0.663	0.648	0.634	0.621	0.609	0.597	0.585
16	0.692	0.677	0.662	0.649	0.636	0.623	0.610	0.599
17	0.706	0.691	0.677	0.662	0.649	0.636	0.624	0.612
18	0.720	0.705	0.690	0.676	0.662	0.650	0.637	0.626
19	0.734	0.718	0.704	0.689	0.676	0.663	0.651	0.639
20	0.747	0.731	0.717	0.702	0.689	0.676	0.663	0.652
21	0.760	0.745	0.730	0.715	0.701	0.689	0.676	0.664
22	0.773	0.758	0.742	0.728	0.715	0.701	0.689	0.677
23	0.785	0.770	0.754	0.740	0.727	0.714	0.701	0.690
24	0.797	0.781	0.766	0.752	0.738	0.725	0.713	0.702
25	0.808	0.792	0.777	0.764	0.750	0.737	0.725	0.714
26	0.819	0.803	0.789	0.775	0.761	0.748	0.736	0.725
27	0.829	0.814	0.799	0.785	0.772	0.759	0.747	0.736
28	0.838	0.823	0.809	0.795	0.782	0.769	0.757	0.747
29	0.847	0.832	0.817	0.804	0.791	0.779	0.767	0.757
30	0.854	0.840	0.826	0.812	0.800	0.788	0.777	0.766
31	0.862	0.847	0.833	0.819	0.807	0.795	0.783	0.772
32	0.870	0.854	0.840	0.826	0.814	0.801	0.790	0.778
33	0.878	0.863	0.847	0.833	0.821	0.808	0.796	0.785
34	0.887	0.870	0.856	0.841	0.828	0.815	0.803	0.792
35	0.895	0.880	0.864	0.850	0.835	0.822	0.810	0.799
36	0.904	0.888	0.873	0.857	0.844	0.830	0.817	0.806
37	0.914	0.897	0.881	0.866	0.851	0.838	0.825	0.813
38	0.924	0.907	0.890	0.875	0.860	0.846	0.833	0.820
39	0.935	0.917	0.900	0.884	0.869	0.855	0.841	0.829
40	0.946	0.927	0.910	0.894	0.878	0.863	0.850	0.836
41	0.957	0.938	0.920	0.903	0.888	0.873	0.858	0.846
42	0.969	0.950	0.931	0.914	0.898	0.882	0.868	0.854
43	0.981	0.961	0.943	0.925	0.908	0.892	0.877	0.863
44	0.995	0.974	0.955	0.936	0.919	0.903	0.887	0.873
45	1.009	0.987	0.967	0.948	0.930	0.914	0.898	0.883
46	1.024	1.001	0.980	0.961	0.942	0.925	0.909	0.893
47	1.040	1.017	0.994	0.974	0.955	0.937	0.920	0.904
48	1.056	1.032	1.010	0.988	0.968	0.950	0.932	0.916
49	1.074	1.049	1.025	1.004	0.982	0.963	0.945	0.927
50	1.093	1.066	1.042	1.019	0.998	0.977	0.958	0.940
51	1.113	1.085	1.060	1.036	1.013	0.992	0.972	0.953
52	1.135	1.106	1.078	1.053	1.030	1.008	0.987	0.967
53	1.158	1.127	1.099	1.072	1.047	1.024	1.003	0.983
54	1.183	1.150	1.120	1.092	1.066	1.042	1.019	0.998
55	1.210	1.176	1.144	1.114	1.087	1.061	1.037	1.015
56	1.240	1.203	1.169	1.137	1.108	1.081	1.056	1.032
57	1.273	1.233	1.196	1.162	1.131	1.103	1.076	1.051
58	1.309	1.265	1.226	1.190	1.157	1.126	1.098	1.072
59	1.349	1.302	1.258	1.220	1.184	1.151	1.121	1.093
60+	1.394	1.342	1.295	1.252	1.214	1.178	1.146	1.116

表C.18 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁				
	80	81	82	83	84+
15	0.575	0.564	0.554	0.544	0.535
16	0.588	0.577	0.567	0.557	0.548
17	0.601	0.590	0.580	0.571	0.561
18	0.614	0.604	0.593	0.583	0.574
19	0.627	0.617	0.607	0.597	0.587
20	0.640	0.630	0.619	0.610	0.600
21	0.653	0.643	0.632	0.622	0.613
22	0.666	0.655	0.645	0.635	0.626
23	0.678	0.668	0.658	0.648	0.639
24	0.690	0.679	0.670	0.661	0.651
25	0.703	0.692	0.682	0.672	0.663
26	0.714	0.704	0.694	0.685	0.676
27	0.725	0.715	0.705	0.696	0.688
28	0.736	0.726	0.717	0.707	0.700
29	0.746	0.737	0.728	0.719	0.711
30	0.756	0.747	0.738	0.730	0.722
31	0.762	0.752	0.743	0.735	0.727
32	0.768	0.759	0.749	0.740	0.732
33	0.774	0.764	0.755	0.746	0.738
34	0.781	0.770	0.761	0.752	0.743
35	0.788	0.777	0.767	0.758	0.750
36	0.795	0.784	0.774	0.764	0.755
37	0.802	0.791	0.780	0.771	0.762
38	0.809	0.798	0.787	0.778	0.769
39	0.816	0.805	0.794	0.785	0.775
40	0.825	0.812	0.801	0.792	0.782
41	0.832	0.821	0.809	0.799	0.789
42	0.841	0.829	0.818	0.806	0.796
43	0.850	0.838	0.825	0.815	0.804
44	0.859	0.846	0.834	0.822	0.812
45	0.869	0.855	0.843	0.831	0.820
46	0.879	0.865	0.852	0.840	0.829
47	0.889	0.875	0.862	0.849	0.837
48	0.900	0.885	0.871	0.859	0.846
49	0.911	0.896	0.882	0.869	0.856
50	0.923	0.908	0.893	0.879	0.866
51	0.936	0.920	0.904	0.890	0.876
52	0.949	0.932	0.916	0.901	0.888
53	0.963	0.945	0.929	0.913	0.899
54	0.979	0.959	0.942	0.926	0.911
55	0.994	0.975	0.956	0.939	0.923
56	1.011	0.990	0.972	0.953	0.937
57	1.028	1.007	0.987	0.969	0.951
58	1.047	1.025	1.004	0.984	0.966
59	1.068	1.043	1.021	1.001	0.981
60+	1.089	1.064	1.040	1.018	0.998

附录 D
(规范性附录)
氡致肺癌超额相对危险的计算

氡致肺癌超额相对危险 (ERR) 用式 (D.1) 计算:

$$ERR = WLM^{0.82} \times ERR_{1WLM} \times T_t \dots\dots\dots (D.1)$$

式中:

WLM ——氡子体年累积照射量, 工作水平月;

$WLM^{0.82}$ ——氡子体照射量效应关系校正后值, WLM 为 10~40 WLM 时的 $WLM^{0.82}$ 值见表 D.1;

ERR_{1WLM} ——95%分位数时 1 WLM 氡子体照射超额相对危险系数, WLM^{-1} , 由表 (D.2) 可查得依赖于诊断年龄(a , 岁)和各年份暴露后经历的时间(t , 年数)的有吸烟史者氡子体超额相对危险系数($ERR_{1WLM, 95\%, \text{吸烟}}$);

T_t ——潜伏期校正因子, 见附录 F。

如无吸烟史时, 由式 (D.2) 求得 $ERR_{1WLM, 95\%, \text{不吸烟}}$ 。

$$ERR_{1WLM, 95\%, \text{不吸烟}} = ERR_{1WLM, 95\%, \text{吸烟}} \times T_t \times 3.8 \dots\dots\dots (D.2)$$

式中:

$ERR_{1WLM, 95\%, \text{不吸烟}}$ ——不吸烟的超额相对危险系数值;

$ERR_{1WLM, 95\%, \text{吸烟}}$ ——吸烟的超额相对危险系数值;

T_t ——潜伏期校正因子, 见附录 F;

3.8 ——给定 a 或 t 时不吸烟的超额相对危险系数值 ($ERR_{1WLM, 95\%, \text{不吸烟}}$) 与吸烟的相应值 ($ERR_{1WLM, 95\%, \text{吸烟}}$) 的比值。

表 D.1 WLM 为 10~40 WLM 时氡子体照射量效应关系校正后值, $WLM^{0.82}$

WLM	$WLM^{0.82}$	WLM	$WLM^{0.82}$	WLM	$WLM^{0.82}$	WLM	$WLM^{0.82}$
10	6.61	18	10.7	26	14.5	34	18.0
11	7.14	19	11.2	27	14.9	35	18.5
12	7.67	20	11.7	28	15.4	36	18.9
13	8.19	21	12.1	29	15.8	37	19.3
14	8.71	22	12.6	30	16.3	38	19.7
15	9.21	23	13.1	31	16.7	39	20.2
16	9.71	24	13.5	32	17.1	40	20.6
17	10.2	25	14.0	33	17.6	—	—

表D.2 有吸烟史的氡致肺癌 $ERR_{1WLM, 95\%, \text{吸烟}}$

a	t										
	≤5	6	7	8	9	10	11	12	13	14	15
≤45	2.11	1.89	1.70	1.52	1.36	1.22	1.10	0.982	0.880	0.789	0.708
46	1.89	1.69	1.52	1.36	1.22	1.09	0.980	0.879	0.788	0.706	0.633
47	1.69	1.52	1.36	1.22	1.09	0.979	0.877	0.786	0.705	0.631	0.566
48	1.52	1.36	1.22	1.09	0.977	0.876	0.785	0.703	0.630	0.565	0.506
49	1.36	1.22	1.09	0.976	0.875	0.784	0.702	0.629	0.564	0.505	0.453
50	1.22	1.09	0.976	0.874	0.783	0.701	0.628	0.563	0.504	0.452	0.405
51	1.09	0.975	0.873	0.782	0.701	0.628	0.562	0.504	0.451	0.404	0.362
52	0.975	0.873	0.782	0.700	0.627	0.562	0.503	0.451	0.404	0.361	0.324
53	0.873	0.782	0.700	0.627	0.561	0.503	0.450	0.403	0.361	0.323	0.290
54	0.782	0.700	0.627	0.561	0.502	0.450	0.403	0.361	0.323	0.289	0.259
55	0.700	0.627	0.561	0.502	0.450	0.403	0.360	0.323	0.289	0.259	0.232
56	0.627	0.561	0.502	0.450	0.402	0.360	0.323	0.289	0.258	0.231	0.207
57	0.561	0.502	0.450	0.402	0.360	0.322	0.289	0.258	0.231	0.207	0.185
58	0.503	0.450	0.403	0.360	0.322	0.289	0.258	0.231	0.207	0.185	0.166
59	0.450	0.403	0.360	0.322	0.289	0.258	0.231	0.207	0.185	0.166	0.148
60	0.403	0.361	0.323	0.289	0.258	0.231	0.207	0.185	0.166	0.148	0.133
61	0.361	0.323	0.289	0.258	0.231	0.207	0.185	0.166	0.148	0.132	0.119
62	0.323	0.289	0.259	0.231	0.207	0.185	0.166	0.148	0.132	0.118	0.106
63	0.289	0.259	0.231	0.207	0.185	0.166	0.148	0.132	0.119	0.106	0.0948
64	0.259	0.232	0.207	0.185	0.166	0.148	0.133	0.119	0.106	0.0948	0.0847
65	0.232	0.207	0.186	0.166	0.148	0.133	0.119	0.106	0.0948	0.0848	0.0758
66	0.208	0.186	0.166	0.148	0.133	0.119	0.106	0.0948	0.0848	0.0758	0.0678
67	0.186	0.166	0.149	0.133	0.119	0.106	0.0949	0.0849	0.0759	0.0678	0.0606
68	0.167	0.149	0.133	0.119	0.106	0.0950	0.0849	0.0759	0.0679	0.0606	0.0542
69	0.149	0.133	0.119	0.107	0.0951	0.0850	0.0760	0.0679	0.0607	0.0542	0.0485
70	0.134	0.119	0.107	0.0953	0.0852	0.0761	0.0680	0.0608	0.0543	0.0485	0.0434
71	0.120	0.107	0.0955	0.0853	0.0762	0.0681	0.0608	0.0544	0.0486	0.0434	0.0388
72	0.107	0.0957	0.0855	0.0764	0.0682	0.0609	0.0544	0.0486	0.0434	0.0388	0.0347
73	0.0959	0.0857	0.0765	0.0683	0.0611	0.0545	0.0487	0.0435	0.0389	0.0347	0.0310
74	0.0859	0.0767	0.0685	0.0612	0.0546	0.0488	0.0436	0.0389	0.0348	0.0311	0.0277
≥75	0.0769	0.0687	0.0613	0.0548	0.0489	0.0437	0.0390	0.0348	0.0311	0.0278	0.0248

表D.2 (续)

a	t									
	16	17	18	19	20	21	22	23	24	≥25
≤45	0.634	0.569	0.510	0.457	0.410	0.367	0.329	0.295	0.265	0.237
46	0.567	0.508	0.456	0.408	0.366	0.328	0.294	0.264	0.236	0.212
47	0.507	0.455	0.407	0.365	0.327	0.293	0.263	0.236	0.211	0.189
48	0.454	0.406	0.364	0.326	0.292	0.262	0.235	0.210	0.189	0.169
49	0.406	0.363	0.326	0.292	0.261	0.234	0.210	0.188	0.168	0.151
50	0.363	0.325	0.291	0.261	0.234	0.209	0.188	0.168	0.150	0.135
51	0.324	0.290	0.260	0.233	0.209	0.187	0.168	0.150	0.134	0.120
52	0.290	0.260	0.233	0.208	0.187	0.167	0.150	0.134	0.120	0.108
53	0.259	0.232	0.208	0.186	0.167	0.149	0.134	0.120	0.107	0.096
54	0.232	0.208	0.186	0.166	0.149	0.133	0.120	0.107	0.0958	0.0858
55	0.207	0.186	0.166	0.149	0.133	0.119	0.107	0.0956	0.0856	0.0766
56	0.185	0.166	0.149	0.133	0.119	0.107	0.0954	0.0854	0.0764	0.0684
57	0.166	0.148	0.133	0.119	0.106	0.0952	0.0852	0.0763	0.0683	0.0611
58	0.148	0.133	0.119	0.106	0.0951	0.0851	0.0762	0.0682	0.0610	0.0546
59	0.133	0.119	0.106	0.0950	0.0850	0.0760	0.0681	0.0609	0.0545	0.0488
60	0.119	0.106	0.0949	0.0849	0.0760	0.0680	0.0608	0.0544	0.0487	0.0436
61	0.106	0.0948	0.0848	0.0759	0.0679	0.0607	0.0543	0.0486	0.0435	0.0389
62	0.0948	0.0848	0.0758	0.0678	0.0607	0.0543	0.0485	0.0434	0.0388	0.0347
63	0.0847	0.0758	0.0678	0.0606	0.0542	0.0485	0.0434	0.0388	0.0347	0.0310
64	0.0758	0.0678	0.0606	0.0542	0.0485	0.0433	0.0388	0.0347	0.0310	0.0277
65	0.0678	0.0606	0.0542	0.0484	0.0433	0.0387	0.0346	0.0310	0.0277	0.0248
66	0.0606	0.0542	0.0484	0.0433	0.0387	0.0346	0.0309	0.0277	0.0247	0.0221
67	0.0542	0.0484	0.0433	0.0387	0.0346	0.0309	0.0276	0.0247	0.0221	0.0198
68	0.0485	0.0433	0.0387	0.0346	0.0309	0.0276	0.0247	0.0221	0.0197	0.0176
69	0.0433	0.0387	0.0346	0.0309	0.0276	0.0247	0.0221	0.0197	0.0176	0.0158
70	0.0387	0.0346	0.0309	0.0276	0.0247	0.0221	0.0197	0.0176	0.0157	0.0141
71	0.0346	0.031	0.0277	0.0247	0.0221	0.0197	0.0176	0.0157	0.0141	0.0126
72	0.0310	0.0277	0.0247	0.0221	0.0197	0.0176	0.0157	0.0141	0.0126	0.0112
73	0.0277	0.0247	0.0221	0.0197	0.0176	0.0158	0.0141	0.0126	0.0112	0.0100
74	0.0248	0.0221	0.0198	0.0176	0.0158	0.0141	0.0126	0.0112	0.0100	0.0090
≥75	0.0221	0.0198	0.0177	0.0158	0.0141	0.0126	0.0112	0.0100	0.0090	0.0080

附录 E
(规范性附录)
外照射致肺癌吸烟校正因子

外照射致癌吸烟校正因子见表E.1。

表E.1 外照射致肺癌吸烟校正因子

吸烟类别 (S)	吸烟校正因子 (W_S)	
	男	女
合计	1.00	1.00
从不吸烟	4.74	3.90
曾经吸烟	1.19	0.98
现在吸烟	0.42	0.35
<10 根/d	1.22	1.00
10 根/d~20 根/d	0.49	0.41
21 根/d~39 根/d	0.28	0.23
≥40 根/d	0.20	0.16
一直吸烟 (现在和曾经吸烟)	0.51	0.41
注：引自IREP NIH-03。		

附录F

(规范性附录)

放射致癌潜伏期校正因子

放射致癌潜伏期校正因子见表F.1。

表F.1 放射致癌潜伏期校正因子, T_e

潜伏时间 (t) a	实体癌 (包括氡致肺癌)	甲状腺癌	白血病
1	0.000197	0.000676	0.0429
2	0.000731	0.00409	0.350
3	0.00271	0.0243	0.866
4	0.0100	0.131	0.987
5	0.0362	0.477	0.999
6	0.122	0.847	—
7	0.342	0.971	—
8	0.658	0.995	—
9	0.878	0.999	—
10	0.964	—	—
11	0.990	—	—
12	0.997	—	—
13	0.999	—	—

附录G
(规范性附录)
95%可信限上限病因概率的估算

G.1 95%可信限上限病因概率计算公式

病因概率的 95%的可信上限见公式(G.1)。

$$PC_{95\%,U} = G \times S^{1.96} = \exp(\ln G + 1.96 \ln S) \dots\dots\dots (G.1)$$

式中:

$PC_{95\%,U}$ ——95%可信限上限的 PC 值和经偏倚系数校正后的 95%可信限上限 PC 值;

G —— PC 的几何均数, 即公式 A.1 计算得到的 PC 值;

S —— PC 的几何标准差。

校正后的病因概率的 95%的可信上限见公式(G.2)。

$$PC'_{95\%,U} = \frac{V \times PC_{95\%,U}}{1 + PC_{95\%,U} \times (V-1)} \dots\dots\dots (G.2)$$

式中:

$PC'_{95\%,U}$ ——经偏倚系数校正后的 PC 的 95%可信限上限值;

$PC_{95\%,U}$ —— PC 的 95%可信限上限值;

V —— PC 的偏倚校正系数。

G.2 各种癌症的综合不正确性和偏倚校正系数

各种癌症的综合不正确性 (S) 和偏倚校正系数 (V) 见表 G.1。

表G.1 各种癌症的综合不正确性 (S) 和偏倚校正系数 (V)

癌症种类	照射后时间 a	综合不确定性 S	偏倚校正系数 V
胃癌	5~14	1.79	1.15
	≥ 15	1.74	1.62
结肠癌	5~14	1.68	1.15
	≥ 15	1.63	1.62
肺癌	5~14	1.79	1.15
	≥ 15	1.74	1.62
除慢淋外所有白血病	任何时间	1.59	1.62
急性或慢粒白血病	任何时间	1.61	1.62
乳腺癌	5~14	1.46	1.15
	≥ 15	1.40	1.62
食管癌	5~14	1.92	1.15
	≥ 15	1.88	1.62

表G. 1（续）

癌症种类	照射后时间 a	综合不确定性 S	偏倚校正系数 V
膀胱癌	5~14	1.68	1.15
	15+	1.63	1.62
肝癌	5~14	1.88	0.71
	15+	1.84	1.00
甲状腺癌	5~14	1.54	0.71
	15+	1.49	1.00
骨癌	任何时间	1.57	1.00
引自 NIH（1985）表VII-7。			

附录H
(资料性附录)
放射致癌病因概率 (PC) 计算实例

H.1 放射致癌病因概率计算实例 1

某男，32岁患白血病，25岁~30岁期间，因职业照射，致红骨髓累积剂量0.3Gy。列表计算职业照射病因概率值的95%的上限值为116%。GBZ 97-2009计算结果为112%。具体计算用参数及过程见表H.1。

表H.1 例1 $ERR_{\text{合计}}$ 和PC均值计算表

受照年龄 岁	ERR_{IGy}	D Gy	$F(D)$	t 年	T_t	ERR_T 校正	ERR 合计校正	PC %	$PC_{95\%}$ 上限 %
25	3.959	0.05	0.0522	7	1	0.207	1.071	51.73	116
26	3.961	0.05	0.0522	6	1	0.207			
27	3.951	0.05	0.0522	5	0.999	0.206			
28	3.935	0.05	0.0522	4	0.987	0.203			
29	3.925	0.05	0.0522	3	0.866	0.177			
30	3.961	0.05	0.0522	2	0.350	0.0723			
注 1: 查询 ERR_{IGy} , 见表 C.17; 注 2: $F(D)=D\times (1+0.87\times D)$; 注 3: t =诊断年龄-受照年龄; 查询 T_t , 见表 F.1; 注 4: $ERR_{\text{合计校正}}=ERR\times F(D) \times T$; 注 5: $PC=ERR_{\text{合计}}/(ERR_{\text{合计}}+1) \times 100\%$ 。									

方法学比较: PC均值的计算过程如下, 本标准计算PC95%上限值过程详见表H.8, 其计算公式及参数与GBZ97-2009相同。

$$\text{GBZ 97-2009: } ERR=F(D) \times T \times K(A1, S) = F(D) \times T \times E(A1, S) / I(A2, S)$$

$F(D)=D+D^2/116$; T 为受照年龄-照后年数别潜伏期校正因子; $E(A1, S)$ 为受照年龄-性别别危险系数; $I(A2, S)$ 为发病年龄-性别别基线发病率。

$$\text{本标准: } ERR = F(D) \times ERR \times T$$

$F(D)=D \times (1+0.87 \times D)$; ERR 为受照年龄-患癌年龄-性别危险系数;

$T=0.0429, 0.350, 0.866, 0.987, 0.999$ ($t=1$ 年~5年)。

H.2 放射致癌病因概率计算实例 2

某男，33 岁患甲状腺癌，25 岁因职业照射，受照 0.25Gy。列表计算职业照射病因概率值的 95% 的上限值为 31%。GBZ 97-2009 计算结果为 39.6%。具体计算用参数及过程见表 H.2。

表H.2 例2 $ERR_{\text{合计校正}}$ 和 PC 均值计算表

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	t 年	T_t	剂量及剂量 率范围	$DDREF$	$ERR_{\text{合计校正}}$	$ERR_{\text{合计}}$	PC %	$PC_{95\% \text{上限}}$ %
25	0.803	0.25	0.25	8	0.995	高	1	0.20	0.20	16.67	31
注 1: 查询 ERR_{1Gy} , 见附录 C 表 C.16 甲状腺癌男性列; 注 2: $F(D) = D$; 注 3: $t = \text{诊断年龄} - \text{受照年龄}$; 注 4: 查询 T_t , 见表 F.1; 注 5: 剂量及剂量率范围的定义: 年累积剂量 $\leq 0.2Gy$ 为低剂量, 否则为高剂量; 单次照射剂量 $\leq 0.2Gy$ 为低剂量率, 否则为高剂量率; 注 6: $DDREF$ 取值: 低剂量、低剂量率 $DDREF=1.5$, 否则为 1; 注 7: $ERR_{\text{合计校正}} = ERR \times D \times T / DDREF$; 注 8: $PC = ERR_{\text{合计}} / (ERR_{\text{合计}} + 1) \times 100\%$ 。											

方法学比较: PC 均值的计算过程如下, 本标准计算 $PC_{95\%}$ 上限值过程详见表 H.8, 其计算公式及参数与 GBZ97-2009 相同。

GBZ 97-2009: $ERR = D \times T \times K(A1, S)$

当 $t < 5$ 年, $T=0$; 当 t 分别为 5 年, 6 年, 7 年, 8 年, 9 年, T 值分别为 0.074, 0.259,

0.5, 0.741, 0.926; 当 $t > 9$ 年, $T=1$; $K(A1, S)$ 为受照年龄-性别危险系数。

本标准: $ERR = D \times ERR \times T / DDREF$

ERR 为受照年龄-患癌年龄-性别危险系数

$T=0.000676, 0.00409, 0.0243, 0.131, 0.477, 0.847, 0.971, 0.995, 0.999$ ($t=1$ 年~9 年)

H.3 放射致癌病因概率计算实例3

男性，40岁~44岁间从事铀矿井下作业5年，历史暴露量见下表，50岁患肺癌，计算来自井下职业照射的病因概率95%的上限值为97.89%。GBZ 97-2009 计算结果为83.2%。如果该人目前吸烟10支/天~20支/天。本标准病因概率95%的上限值为92.43%。GBZ 97-2009 计算结果为65.4%。具体计算用参数及过程见表H.3。

表H.3 例3ERR_{合计}和PC95%上限值计算表

受照年龄 岁	WLM	$WLM^{0.82}$	t 年	ERR_{IWLM} 95%	T_t	ERR_{IWLM} 校正 95%	ERR 合计 95%	ERR 合计吸烟95%	$PC_{95\%}$ 上限 %
40	8.5	6.61	10	0.701	0.964	4.63	12.21	46.41	97.89
41	7.0	4.93	9	0.783	0.878	3.86			
42	7.2	5.05	8	0.874	0.658	4.41			
43	4.0	3.12	7	0.976	0.342	3.04			
44	4.0	3.12	6	1.09	0.122	3.40			
注 1：查询 $WLM^{0.82}$ ，见表 D. 1；									
注 2： t =诊断年龄-受照年龄；查询 ERR_{IWLM} ，见表 D. 2；									
注 3：查询 T_t ，见表 F. 1；									
注 4： $ERR_{IWLM} \text{校正} = WLM^{0.82} \times ERR_{IWLM, 95\% \text{吸烟}} \times T_t$ ；									
注 5： $ERR_{\text{合计不吸烟} 95\%} = ERR_{\text{合计} 95\% \text{吸烟}} \times 3.8$ ；									
注 6： $PC_{95\% \text{上限}} = ERR_{\text{合计}} / (ERR_{\text{合计}} + 1)$ 。									

方法学比较：本标准计算PC95%上限值是根据ERR的95%上限值计算，GBZ97-2009 计算PC95%上限值的计算是根据附录G中的公式G.1、G.2和表G.1的参数计算的，见附录G。

GBZ 97-2009： $ERR = F(D) \times T \times K(A1, S) \times W$ 其中

$F(D) = WLM$ ； $K(A1, S) = 0.015$ ； W 为吸烟史的权重因子；

当 $t < 5$ 年， $T = 0$ ；当 t 分别为5年，6年，7年，8年，9年， T 值分别为0.074，0.259，

0.5，0.741，0.926；当 $t > 9$ 年， $T = 1$ ； $K(A1, S)$ 为受照年龄-性别危险系数。

本标准： $ERR = WLM^{0.82} \times ERR_{I\text{WLM}} \times T_t$

$ERR_{I\text{WLM}}$ 为受照年龄-患癌年龄-性别危险系数

$T = 0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ （ $t = 1$ 年~12年）

H.4 放射致癌病因概率计算实例 4

某女，50 岁患胃癌，25 岁因职业照射，受照 0.1Gy。列表计算职业照射病因概率值的 95%的上限值为 28%。GBZ 97-2009 计算结果为 1.8%。具体计算用参数及过程见表 H.4。

表H.4 例4ERR_{合计}和PC均值计算表

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	t 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	$ERR_{\text{合计}}$	PC %	$PC_{95\% \text{上限}}$ %
25	1.046	0.1	0.1	30	1	低	1.5	0.0697	0.0697	6.52	28
注1：查询 ERR_{1Gy} ，见附录C表C.9 女性胃癌； 注2： $F(D)=D$ ； 注3： t =诊断年龄-受照年龄； 注4：查询 T_t ，见表F.1； 注5：剂量及剂量率范围的定义：年累积剂量 $\leq 0.2Gy$ 为低剂量，否则为高剂量；单次照射剂量 $\leq 0.2Gy$ 为低剂量率，否则为高剂量率； 注6： $DDREF$ 取值：低剂量、低剂量率 $DDREF=1.5$ ，否则为1； 注7： $ERR_{\text{校正合计}}=ERR \times D \times T / DDREF$ ； 注8： $PC=ERR_{\text{合计}} / (ERR_{\text{合计}}+1) \times 100\%$ 。											

方法学比较： PC 均值的计算过程如下，本标准计算 $PC_{95\%}$ 上限值过程详见表 H.8，其计算公式及参数与 GBZ97-2009 相同。

GBZ 97-2009： $PC=EAR/(B_A+EAR)$

$$EAR = F(D) \times EAR_D / (B_A/B_E)$$

$F(D)=D+D^2/116$ ； EAR_D 性别-受照年龄-随访年份超额绝对危险系数；

B_A 为亚洲人癌症基线发病率； B_A/B_E 为年龄别亚洲人欧美人癌症基线发病率之比。

本标准： $PC=ERR/(ERR+1)$

$$ERR = F(D) \times T \times ERR / DDREF$$

$F(D)=D$ ； ERR 为受照年龄-患癌年龄-性别危险系数； $DDREF$ 为剂量和剂量率效应因子。

$T=0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ ($t=1$ 年~12 年)。

H.5 放射致癌病因概率计算实例 5

某女，45 岁患乳腺癌，20 岁因职业照射，受照 0.1Gy。列表计算职业照射病因概率值的 95%的上限值为 21%。GBZ 97-2009 计算结果为 41.4%。具体计算用参数及过程见表 H.5。

表H.5例5ERR_{合计}和PC均值计算表

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	t 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	$ERR_{\text{合计}}$	PC %	$PC_{95\% \text{上限}}$ %
20	1.192	0.1	0.1	25	1	低	1.5	0.0795	0.0795	7.36	21
注 1: 查询 ERR_{1Gy} , 见附录 C 表 C. 15 女性乳腺癌; 注 2: $F(D) = D$; 注 3: $t = \text{诊断年龄} - \text{受照年龄}$; 注 4: 查询 T_t , 见表 F. 1; 注 5: 剂量及剂量率范围的定义: 年累积剂量 $\leq 0.2Gy$ 为低剂量, 否则为高剂量; 单次照射剂量 $\leq 0.2Gy$ 为低剂量率, 否则为高剂量率; 注 6: $DDREF$ 取值: 低剂量、低剂量率 $DDREF = 1.5$, 否则为 1; 注 7: $ERR_{\text{合计校正}} = ERR \times D \times T / DDREF$; 注 8: $PC = ERR_{\text{合计}} / (ERR_{\text{合计}} + 1) \times 100\%$ 。											

方法学比较: PC 均值的计算过程如下, 本标准计算 $PC_{95\%}$ 上限值过程详见表 H.8, 其计算公式及参数与 GBZ97-2009 相同。

GBZ 97-2009: $PC = EAR / (B_A + EAR)$

$$EAR = F(D) \times EAR_D / (B_A / B_E)$$

$F(D) = D + D^2 / 116$; EAR_D 为性别-受照年龄-随访年份超额绝对危险系数;

B_A 为亚洲人癌症基线发病率; B_A / B_E 为年龄别亚洲人欧美人癌症基线发病率之比。

本标准: $PC = ERR / (ERR + 1)$

$$ERR = F(D) \times T \times ERR$$

$F(D) = D$; ERR 为受照年龄-患癌年龄-性别危险系数; $DDREF$ 为剂量和剂量率效应因子;

$T = 0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ ($t = 1$ 年~12 年)。

H.6 放射致癌病因概率计算实例 6

男性 31 岁时，肝部受低 LET 辐射照射 0.1Gy，50 岁时诊断为肝癌。列表计算职业照射病因概率值的 95% 的上限值为 7.2%。GBZ 97-2009 计算结果为 0.2%。具体计算用参数及过程见表 H.6。

表H.6例6ERR_{合计}和PC均值计算表

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	t 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	$ERR_{\text{合计}}$	PC %	$PC_{95\% \text{上限}}$ %
31	0.335	0.1	0.1	19	1	低	1.5	0.0223	0.0223	2.18	7.2
注 1：查询 ERR_{1Gy} ，见附录 C 表 C.4 男性肝癌； 注 2： $F(D) = D$ ； 注 3： $t = \text{诊断年龄} - \text{受照年龄}$ ； 注 4：查询 T_t ，见表 F.1； 注 5：剂量及剂量率范围的定义：年累积剂量 $\leq 0.2Gy$ 为低剂量，否则为高剂量；单次照射剂量 $\leq 0.2Gy$ 为低剂量率，否则为高剂量率； 注 6： $DDREF$ 取值：低剂量、低剂量率 $DDREF = 1.5$ ，否则为 1； 注 7： $ERR_{\text{合计校正}} = ERR \times D \times T / DDREF$ ； 注 8： $PC = ERR_{\text{合计}} / (ERR_{\text{合计}} + 1) \times 100\%$ 。											

方法学比较： PC 均值的计算过程如下，本标准计算 $PC_{95\%}$ 上限值过程详见表 H.8，其计算公式及参数与 GBZ97-2009 相同。

GBZ 97-2009： $PC = EAR / (B_A + EAR)$

$$EAR = F(D) \times EAR_D / (B_A / B_E)$$

$F(D) = D + D^2 / 116$ ； EAR_D 为性别-受照年龄-随访年份超额绝对危险系数；

B_A 为亚洲人癌症基线发病率； B_A / B_E 为年龄别亚洲人欧美人癌症基线发病率之比。

本标准： $PC = ERR / (ERR + 1)$

$$ERR = F(D) \times T \times ERR / DDREF$$

$F(D) = D$ ； ERR 为受照年龄-患癌年龄-性别危险系数； $DDREF$ 为剂量和剂量率效应因子。

$T = 0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ ($t = 1$ 年~12 年)。

H.7 放射致癌病因概率计算实例 7

女性 35 岁时，膀胱组织受低 LET 辐射照射 0.1Gy，55 岁时诊断为膀胱癌。列表计算职业照射病因概率值的 95% 的上限值为 38%。GBZ 97-2009 计算结果为 63.3%。具体计算用参数及过程见表 H.7。

表H.7 例7ERR_{合计}和PC均值计算表

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	t 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	$ERR_{\text{合计}}$	PC %	$PC_{95\% \text{上限}}$ %
35	1.78	0.1	0.1	20	1	低	1.5	0.1187	0.1187	10.61	38
注 1: 查询 ERR_{1Gy} , 见附录 C 表 C.13 女性膀胱癌; 注 2: $F(D) = D$; 注 3: $t = \text{诊断年龄} - \text{受照年龄}$; 注 4: 查询 T_t , 见表 F.1; 注 5: 剂量及剂量率范围的定义: 年累积剂量 $\leq 0.2Gy$ 为低剂量, 否则为高剂量; 单次照射剂量 $\leq 0.2Gy$ 为低剂量率, 否则为高剂量率; 注 6: $DDREF$ 取值: 低剂量、低剂量率 $DDREF=1.5$, 否则为 1; 注 7: $ERR_{\text{合计校正}} = ERR \times D \times T / DDREF$; 注 8: $PC = ERR_{\text{合计}} / (ERR_{\text{合计}} + 1) \times 100\%$ 。											

方法学比较: PC 均值的计算过程如下, 本标准计算 $PC_{95\%}$ 上限值过程详见表 H.8, 其计算公式及参数与 GBZ97-2009 相同。

GBZ 97-2009: $PC = EAR / (B_A + EAR)$

$$EAR = F(D) \times EAR_D / (B_A / B_E)$$

$F(D) = D + D^2 / 116$; EAR_D 为性别-受照年龄-随访年份超额绝对危险系数;

B_A 为亚洲人癌症基线发病率; B_A / B_E 为年龄别亚洲人欧美人癌症基线发病率之比。

本标准: $PC = ERR / (ERR + 1)$

$$ERR = F(D) \times T \times ERR / DDREF$$

$F(D) = D$; ERR 为受照年龄-患癌年龄-性别危险系数; $DDREF$ 为剂量和剂量率效应因子。

$T = 0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ ($t = 1$ 年~12 年)。

H.8 放射致癌病因概率计算实例 8

男性 45 岁时，乳腺受低 LET 辐射照射 0.1Gy，55 岁时诊断为乳腺癌。列表计算职业照射病因概率值的 95% 的上限值为 159%。具体计算用参数及过程见表 H.8。

表H.8 例8 $ERR_{\text{合计}}$ 和 PC 均值计算表

受照年龄 岁	$ERR_{1\text{Gy}}$	D Gy	$F(D)$	t 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	$ERR_{\text{合计}}$	PC %	$PC_{95\% \text{上限}}$ %
35	75.480	0.1	0.1	10	0.964	低	1.5	4.8508	4.8508	82.91	159
注 1：查询 $ERR_{1\text{Gy}}$ ，见附录 C 表 C.8 男性乳腺癌； 注 2： $F(D) = D$ ； 注 3： $t = \text{诊断年龄} - \text{受照年龄}$ ； 注 4：查询 T_t ，见表 F.1； 注 5：剂量及剂量率范围的定义：年累积剂量 $\leq 0.2\text{Gy}$ 为低剂量，否则为高剂量；单次照射剂量 $\leq 0.2\text{Gy}$ 为低剂量率，否则为高剂量率； 注 6： $DDREF$ 取值：低剂量、低剂量率 $DDREF = 1.5$ ，否则为 1； 注 7： $ERR_{\text{合计校正}} = ERR \times D \times T / DDREF$ ； 注 8： $PC = ERR_{\text{合计}} / (ERR_{\text{合计}} + 1) \times 100\%$ 。											

H. 9 放射致癌病因概率 95%可信限上限计算实例

放射致癌病因概率 95%可信上限计算实例见表 H.9。此表不适用氡致肺癌，氡致肺癌相关计算详见附录 D。

表H.9根据PC均值计算其95%可信限上限

例题 ^a	癌症类型	照后年数 年	<i>S</i>	<i>V</i>	<i>G</i> %	<i>S</i> ^{1.96}	<i>PC</i> _{95%} %	<i>PC'</i> _{95%, U} ^b %
例 1	白血病	7	1.59	1.62	51.73	2.48	128	116
例 2	甲状腺癌	8	1.54	0.71	16.67	2.33	39	31
例 4	胃癌	25	1.74	1.62	6.52	2.96	19	28
例 5	乳腺癌	25	1.4	1.62	7.36	1.93	14	21
例 6	肝癌	19	1.84	1	2.18	3.30	7.2	7.2
例 7	膀胱癌	20	1.63	1.62	10.61	2.61	28	38
例 8	乳腺癌	10	1.46	1.55	82.91	2.10	174	159
^a 采用附录 H. 1-2，4-8 的计算实例；附录 H. 3 给出了例 3 的 <i>PC</i> _{95%} 上限值； ^b <i>PC</i> > 100%，估计源于假设中的问题，遇此情况，视为 <i>PC</i> > 50%。								

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