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中华人民共和国国家职业卫生标准

GBZ 97—2026

代替 GBZ 97—2017

职业性放射性肿瘤病因判断标准

Standard for occupational radiation-induced cancer causation

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前 言

本标准为强制性标准。

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，除结构调整和编辑性改动外，主要技术变化如下：

- a) 增加了术语条目“工作水平月”（见3.7）；
- b) 更改了病因概率的计算要求（见第5章，2017年版的第5章）；
- c) 删除了复合照射ERR的计算（见2017年版的A.2.3）；
- d) 更改了恶性肿瘤名称（见表B.1和表G.1，2017年版的表B.1和表G.1）；
- e) 更改了中国人放射致癌超额相对危险系数表，甲状腺癌除外（见附录C，2017年版的附录C）；
- f) 增加了男性乳腺癌超额危险系数（见表C.14）；
- g) 更改了氡致肺癌超额相对危险的计算（见附录D，2017年版的附录D）；
- h) 更改了放射致癌病因概率的计算示例（见附录H，2017年版的附录H）。

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。

本标准主要起草人：孙全富、苏垠平、邓君、高锦、樊芳、顾叶青、陈维、刘建香、刘思宇、战景明。

本标准及其所代替标准的历次版本发布情况为：

- 1996年首次发布为GB 16386—1996；
- 2002年第一次修订转化为GBZ 97—2002，2009年第二次修订，2017年第三次修订；
- 本次为第四次修订。

职业性放射性肿瘤病因判断标准

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。
本标准适用于劳动者受职业照射后发生恶性肿瘤的病因学判断。

2 规范性引用文件

下列文件中的内容通过文中的规范性引用而构成本标准必不可少的条款。其中，注日期的引用文件，仅该日期对应的版本适用于本标准；不注日期的引用文件，其最新版本（包括所有的修改单）适用于本标准。

GB/T 16149 外照射慢性放射病剂量估算方法
GBZ 129 职业性内照射个人监测规范
GBZ/T 270 矿工氡子体个人累积暴露量估算规范

3 术语和定义

下列术语和定义适用于本标准。

3.1

放射性肿瘤 radiation-induced cancer

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关联的恶性肿瘤。

3.2

绝对危险 absolute risk; AR

一定剂量照射引起的某种恶性肿瘤的超额发病率，亦即恶性肿瘤概率的增加量，由受照射和未受照射人群恶性肿瘤发病率之差或观察数与预期数之差得出。

3.3

相对危险 relative risk; RR

受照和未受照人群恶性肿瘤发病率之比或观察数与预期数之比。

3.4

超额相对危险 excess relative risk; ERR

受照人群相对于未受照人群相对危险的增量。

注：等于RR-1。因为电离辐射导致的癌症与受照剂量之间普遍存在线性关系，常用的一个相关指标是ERR/Gy，即单位剂量照射引起的相对危险增加额，称为超额相对危险系数。

3.5

病因概率 probability of causation; PC

受到辐射照射的某一个人所患的恶性肿瘤由其辐射照射引起的概率的估计值。

注： $PC=ERR/(ERR+1)$ 。

3.6

癌症基线发病率 cancer baseline rate

一般人群某种恶性肿瘤的自然发病率。

3.7

工作水平月 working level month; WLM

常用的衡量氡 (^{222}Rn) 或钍射气 (^{220}Rn) 子体导致的累积暴露量的单位。

注1: 工作水平 (working level, WL) 等于单位体积空气中任意氡气或钍射气短寿命子体的 α 潜能浓度, $1\text{WL}=1.3\times 10^8\text{MeV}/\text{m}^3$ 。它是工作水平和工作的月数 (1个月按170小时计) 的乘积。

注2: 1个工作水平月 (1WLM) 就是在1个工作水平下工作一个月而导致的累积暴露量, 等于 $3.54\text{mJ}\cdot\text{h}\cdot\text{m}^{-3}$ 。

3.8

氡子体照射量效应校正因子 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。

注: 表示为 $\text{ERR}=\text{ERR}_{\text{WLM}}\times\text{WLM}^{0.82}$ 。

3.9

剂量和剂量率效能因子 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 判断依据

判断职业性放射性肿瘤应满足下列条件:

- 受到职业照射后, 临床确诊为原发性恶性肿瘤;
- 根据患者性别、受照时年龄、发病潜伏期和受照剂量, 按本标准第6章计算所患恶性肿瘤归因于所受照射的病因概率 (PC);
- 计算所得 PC 95%可信区间的上限 $\geq 50\%$ 者, 应判断为职业性放射性肿瘤。

5 病因概率的计算要求

计算病因概率, 需提供下列资料:

- 患者的姓名、性别、出生年月、恶性肿瘤诊断 (包括原发部位和细胞学类型)、诊断依据、诊断日期和诊断单位;
- 由个人剂量档案或有关记载获得患者接受射线的种类、照射条件、开始受照时间和照射延续时间, 估算或重建受到照射的靶器官吸收剂量, 剂量估算方法按照GB/T 16149和GBZ 129进行;
- 氡子体的个人累积暴露量按GBZ/T 270估算。

6 病因概率的计算方法

根据本标准第5章所列资料, 按照下列方法计算所患癌症归因于既往职业照射的PC值:

- 放射致癌超额相对危险 (ERR) 和放射致癌病因概率 (PC) 计算, 见本标准附录 A;
- 可用本标准计算病因概率的肿瘤名单, 见本标准附录 B;
- 中国人放射致癌超额相对危险系数表, 见本标准附录 C, 系数表根据 2018 年中国癌症发病率数据经人群转移得出;
- 氡致肺癌超额相对危险的计算, 见本标准附录 D;
- 外照射致肺癌吸烟校正因子, 见本标准附录 E;
- 放射致癌潜伏期校正因子, 见本标准附录 F;
- 病因概率的 95%可信限上限估算, 见本标准附录 G;
- 放射致癌病因概率计算示例, 见本标准附录 H。

附录 A
(规范性)
放射致癌超额相对危险和放射致癌病因概率计算

A.1 病因概率的计算方法

病因概率表示个人所患癌症归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, 用癌症超额相对危险ERR计算, 见公式 (A.1):

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

式中:

PC ——放射致癌病因概率;

ERR——放射致癌超额相对危险。

A.2 超额相对危险的计算和校正

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

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

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 $F(D)=D+0.87 \times D^2$;

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):

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

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 潜伏期校正: 对潜伏期内发生的恶性肿瘤的ERR进行潜伏期校正。潜伏期 (t) = 发病年龄 (a) - 受照年龄 (e)。见公式 (A.4):

$$ERR_{t\text{校正}} = F(D) \times ERR_{Gy} \times T_t \quad (\text{A.4})$$

式中:

$ERR_{t\text{校正}}$ ——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。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 (见本标准附录F)。

A.2.4 吸烟的校正: 外照射致肺癌还需用吸烟校正因子 (W_s) 进行校正。见公式 (A.5):

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

式中:

$ERR_{tw\text{校正}}$ ——吸烟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;

W_s ——吸烟校正因子（见本标准附录E）。

A.2.5 职业照射ERR计算：对于持续多年的职业照射，在计算ERR时，先把每年接受的累积剂量视为一次照射，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.6）：

$$ERR_{\text{合计}} = ERR_{\text{第1年}} + ERR_{\text{第2年}} + ERR_{\text{第3年}} + \cdots + ERR_{\text{第n年}} \cdots \cdots \cdots \quad (\text{A.6})$$

式中：

$ERR_{\text{合计}}$ ——历年超额相对危险值的合计值；

$ERR_{\text{第1年}}$ ——第一年超额相对危险值；

$ERR_{\text{第2年}}$ ——第二年超额相对危险值；

$ERR_{\text{第3年}}$ ——第三年超额相对危险值；

$ERR_{\text{第n年}}$ ——第n年超额相对危险值。

A.2.6 DDREF校正：考虑到职业照射多为低传能线密度（linear energy transfer, LET）慢性小剂量照射，当年累积剂量 $\leq 0.2\text{Gy}$ 时，还需经DDREF校正（DDREF=1.5）。见公式（A.7）：

$$ERR_{\text{合计校正}} = \frac{ERR_{\text{合计}}}{DDREF} \cdots \cdots \cdots \quad (\text{A.7})$$

式中：

$ERR_{\text{合计校正}}$ ——经剂量与剂量效能因子校正后的超额相对危险；

$ERR_{\text{合计}}$ ——逐年累加后的超额相对危险值；

$DDREF$ ——剂量和剂量率效能因子，取 $DDREF=1.5$ ，仅用于实体癌。白血病不做此校正。

附录 B
(规范性)

可用附录 C 计算病因概率的恶性肿瘤

可用本标准附录C列表参数计算病因概率的恶性肿瘤见表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 类目代码 ^a
食管癌 (esophagus 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 (all types of leukemia excluding chronic lymphocyte 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)

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 _{1Gy} 值	7
表C.3	男性结肠癌ERR _{1Gy} 值	10
表C.4	男性肝癌ERR _{1Gy} 值	13
表C.5	男性外照射致肺癌ERR _{1Gy} 值	16
表C.6	男性膀胱癌ERR _{1Gy} 值	19
表C.7	男性食管癌、骨和关节恶性肿瘤ERR _{1Gy} 值	22
表C.8	女性胃癌ERR _{1Gy} 值	25
表C.9	女性结肠癌ERR _{1Gy} 值	28
表C.10	女性肝癌ERR _{1Gy} 值	31
表C.11	女性外照射致肺癌ERR _{1Gy} 值	34
表C.12	女性膀胱癌ERR _{1Gy} 值	37
表C.13	女性食管癌、骨和关节恶性肿瘤ERR _{1Gy} 值	40
表C.14	男性乳腺癌ERR _{1Gy} 值	43
表C.15	女性乳腺癌ERR _{1Gy} 值	50
表C.16	甲状腺癌ERR _{1Gy} 值	57
表C.17	男性除慢淋以外白血病ERR _{1Gy} 值	59
表C.18	女性除慢淋以外白血病ERR _{1Gy} 值	66

C.2 男性实体癌超额危险系数（乳腺癌和甲状腺癌除外）

男性几种实体癌的ERR_{10y}值见表C.2～表C.7。

表 C.2 男性胃癌 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	5.910	5.890	5.844	5.772	5.676	5.555	5.414	5.255	5.080	4.893	4.696	4.493
16	—	5.669	5.624	5.554	5.460	5.344	5.207	5.054	4.885	4.705	4.516	4.321
17	—	—	5.412	5.344	5.252	5.140	5.008	4.860	4.698	4.525	4.343	4.155
18	—	—	—	5.141	5.053	4.944	4.817	4.674	4.518	4.351	4.176	3.995
19	—	—	—	—	4.861	4.756	4.633	4.496	4.345	4.185	4.016	3.842
20	—	—	—	—	—	4.575	4.457	4.324	4.179	4.024	3.862	3.695
21	—	—	—	—	—	—	4.287	4.159	4.019	3.870	3.714	3.553
22	—	—	—	—	—	—	—	4.000	3.866	3.722	3.572	3.417
23	—	—	—	—	—	—	—	—	3.718	3.580	3.435	3.286
24	—	—	—	—	—	—	—	—	—	3.443	3.304	3.160
25	—	—	—	—	—	—	—	—	—	—	3.177	3.039
26	—	—	—	—	—	—	—	—	—	—	—	2.923
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	4.286	4.077	3.868	3.661	3.457	3.259	3.066	2.881	2.703	2.532	2.371	2.217
16	4.121	3.920	3.719	3.520	3.325	3.134	2.949	2.770	2.599	2.436	2.280	2.133
17	3.963	3.769	3.576	3.385	3.197	3.014	2.836	2.664	2.500	2.343	2.193	2.052
18	3.811	3.625	3.439	3.255	3.074	2.898	2.727	2.562	2.404	2.253	2.110	1.974
19	3.664	3.486	3.307	3.130	2.957	2.787	2.623	2.465	2.313	2.167	2.029	1.899
20	3.524	3.352	3.180	3.010	2.843	2.680	2.523	2.370	2.224	2.085	1.952	1.827
21	3.389	3.223	3.058	2.895	2.734	2.578	2.426	2.280	2.139	2.005	1.878	1.757
22	3.259	3.100	2.941	2.784	2.630	2.479	2.333	2.193	2.058	1.929	1.806	1.690
23	3.134	2.981	2.828	2.677	2.529	2.384	2.244	2.109	1.979	1.856	1.738	1.626
24	3.014	2.867	2.720	2.575	2.432	2.293	2.158	2.029	1.904	1.785	1.672	1.565
25	2.899	2.757	2.616	2.476	2.339	2.206	2.076	1.951	1.831	1.717	1.608	1.505
26	2.788	2.652	2.516	2.382	2.250	2.121	1.997	1.877	1.762	1.652	1.547	1.448
27	2.681	2.550	2.420	2.291	2.164	2.040	1.921	1.805	1.695	1.589	1.489	1.393
28	—	2.453	2.327	2.203	2.081	1.963	1.848	1.737	1.630	1.529	1.432	1.341
29	—	—	2.238	2.119	2.002	1.888	1.777	1.671	1.568	1.471	1.378	1.290
30+	—	—	—	2.038	1.926	1.816	1.709	1.607	1.509	1.415	1.326	1.241

表 C.2 男性胃癌 ERR_{16y} 值 (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	2.073	1.937	1.809	1.689	1.578	1.474	1.378	1.288	1.206	1.129	1.058	0.993
16	1.994	1.863	1.740	1.626	1.518	1.419	1.326	1.240	1.161	1.087	1.019	0.957
17	1.918	1.792	1.674	1.564	1.461	1.365	1.276	1.194	1.117	1.047	0.981	0.921
18	1.845	1.724	1.611	1.505	1.406	1.314	1.228	1.149	1.076	1.008	0.945	0.887
19	1.775	1.659	1.550	1.448	1.353	1.265	1.182	1.106	1.036	0.970	0.910	0.855
20	1.708	1.596	1.492	1.394	1.302	1.217	1.138	1.065	0.997	0.934	0.876	0.823
21	1.643	1.536	1.435	1.341	1.253	1.172	1.096	1.025	0.960	0.900	0.844	0.793
22	1.581	1.478	1.381	1.291	1.206	1.128	1.055	0.987	0.924	0.866	0.813	0.763
23	1.521	1.422	1.329	1.242	1.161	1.085	1.015	0.950	0.890	0.834	0.783	0.735
24	1.463	1.368	1.279	1.195	1.117	1.045	0.977	0.915	0.857	0.803	0.754	0.708
25	1.408	1.317	1.231	1.150	1.076	1.006	0.941	0.881	0.825	0.774	0.726	0.682
26	1.355	1.267	1.184	1.107	1.035	0.968	0.906	0.848	0.794	0.745	0.699	0.657
27	1.304	1.219	1.140	1.066	0.996	0.932	0.872	0.816	0.765	0.717	0.674	0.633
28	1.254	1.173	1.097	1.026	0.959	0.897	0.840	0.786	0.737	0.691	0.649	0.610
29	1.207	1.129	1.056	0.987	0.923	0.864	0.808	0.757	0.709	0.666	0.625	0.588
30+	1.161	1.086	1.016	0.950	0.889	0.831	0.778	0.729	0.683	0.641	0.602	0.566
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	0.934	0.879	0.828	0.782	0.739	0.700	0.665	0.632	0.603	0.576	0.551	0.529
16	0.899	0.846	0.798	0.753	0.712	0.675	0.641	0.610	0.581	0.555	0.531	0.510
17	0.866	0.815	0.769	0.726	0.686	0.651	0.618	0.588	0.560	0.535	0.512	0.492
18	0.834	0.785	0.740	0.699	0.661	0.627	0.595	0.566	0.540	0.516	0.494	0.474
19	0.803	0.757	0.713	0.674	0.637	0.604	0.574	0.546	0.521	0.497	0.476	0.457
20	0.774	0.729	0.687	0.649	0.614	0.582	0.553	0.526	0.502	0.480	0.459	0.441
21	0.745	0.702	0.662	0.626	0.592	0.561	0.533	0.507	0.484	0.462	0.443	0.425
22	0.718	0.676	0.638	0.603	0.571	0.541	0.514	0.489	0.467	0.446	0.427	0.410
23	0.692	0.652	0.615	0.581	0.550	0.521	0.495	0.472	0.450	0.430	0.412	0.395
24	0.666	0.628	0.592	0.560	0.530	0.503	0.478	0.455	0.434	0.415	0.397	0.381
25	0.642	0.605	0.571	0.539	0.511	0.484	0.460	0.438	0.418	0.400	0.383	0.368
26	0.618	0.583	0.550	0.520	0.492	0.467	0.444	0.423	0.403	0.386	0.369	0.355
27	0.596	0.562	0.530	0.501	0.475	0.450	0.428	0.407	0.389	0.372	0.356	0.342
28	0.574	0.541	0.511	0.483	0.457	0.434	0.413	0.393	0.375	0.359	0.344	0.330
29	0.553	0.521	0.492	0.465	0.441	0.418	0.398	0.379	0.362	0.346	0.332	0.318
30+	0.533	0.502	0.474	0.449	0.425	0.403	0.383	0.365	0.349	0.334	0.320	0.307

表 C.2 男性胃癌 ERR_{16y} 值 (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	0.508	0.490	0.474	0.459	0.446	0.434	0.424	0.416	0.409	0.403	0.399	0.396
16	0.490	0.473	0.457	0.443	0.430	0.419	0.409	0.401	0.394	0.389	0.385	0.382
17	0.473	0.456	0.441	0.427	0.415	0.404	0.395	0.387	0.380	0.375	0.371	0.369
18	0.456	0.440	0.425	0.412	0.400	0.390	0.381	0.373	0.367	0.362	0.358	0.355
19	0.440	0.424	0.410	0.397	0.386	0.376	0.367	0.360	0.354	0.349	0.345	0.343
20	0.424	0.409	0.395	0.383	0.372	0.363	0.354	0.347	0.341	0.337	0.333	0.331
21	0.409	0.394	0.381	0.370	0.359	0.350	0.342	0.335	0.329	0.325	0.321	0.319
22	0.395	0.381	0.368	0.357	0.346	0.338	0.330	0.323	0.318	0.313	0.310	0.308
23	0.381	0.367	0.355	0.344	0.334	0.326	0.318	0.312	0.306	0.302	0.299	0.297
24	0.367	0.354	0.342	0.332	0.322	0.314	0.307	0.301	0.296	0.292	0.288	0.286
25	0.354	0.342	0.330	0.320	0.311	0.303	0.296	0.290	0.285	0.281	0.278	0.276
26	0.342	0.329	0.319	0.309	0.300	0.293	0.286	0.280	0.275	0.271	0.268	0.266
27	0.329	0.318	0.307	0.298	0.290	0.282	0.276	0.270	0.266	0.262	0.259	0.257
28	0.318	0.307	0.297	0.288	0.279	0.272	0.266	0.261	0.256	0.253	0.250	0.248
29	0.307	0.296	0.286	0.277	0.270	0.263	0.257	0.252	0.247	0.244	0.241	0.239
30+	0.296	0.285	0.276	0.268	0.260	0.254	0.248	0.243	0.239	0.235	0.233	0.231
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.395	0.396	0.398	0.403	0.409	0.419	0.431	0.447	0.467	0.492		
16	0.381	0.382	0.384	0.388	0.395	0.404	0.415	0.431	0.450	0.474		
17	0.367	0.368	0.370	0.374	0.380	0.389	0.400	0.415	0.433	0.457		
18	0.354	0.355	0.357	0.361	0.367	0.375	0.386	0.400	0.417	0.440		
19	0.342	0.342	0.344	0.348	0.353	0.361	0.372	0.385	0.402	0.423		
20	0.330	0.330	0.332	0.335	0.341	0.348	0.358	0.371	0.387	0.408		
21	0.318	0.318	0.320	0.323	0.329	0.336	0.345	0.358	0.373	0.393		
22	0.307	0.307	0.309	0.312	0.317	0.324	0.333	0.344	0.359	0.378		
23	0.296	0.296	0.298	0.301	0.305	0.312	0.321	0.332	0.346	0.364		
24	0.285	0.286	0.287	0.290	0.294	0.301	0.309	0.320	0.334	0.351		
25	0.275	0.275	0.277	0.280	0.284	0.290	0.298	0.308	0.321	0.338		
26	0.265	0.266	0.267	0.270	0.274	0.279	0.287	0.297	0.310	0.325		
27	0.256	0.256	0.257	0.260	0.264	0.269	0.277	0.286	0.298	0.313		
28	0.247	0.247	0.248	0.251	0.254	0.260	0.267	0.276	0.287	0.302		
29	0.238	0.238	0.240	0.242	0.245	0.250	0.257	0.266	0.277	0.291		
30+	0.230	0.230	0.231	0.233	0.237	0.241	0.248	0.256	0.267	0.280		

表 C.3 男性结肠癌 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	7.462	7.130	6.827	6.545	6.277	6.021	5.773	5.533	5.299	5.072	4.851	4.637
16	—	6.890	6.596	6.321	6.062	5.813	5.573	5.340	5.114	4.895	4.681	4.475
17	—	—	6.372	6.106	5.854	5.613	5.380	5.155	4.936	4.724	4.518	4.318
18	—	—	—	5.898	5.653	5.419	5.194	4.976	4.764	4.559	4.360	4.167
19	—	—	—	—	5.460	5.233	5.015	4.803	4.599	4.400	4.207	4.021
20	—	—	—	—	—	5.053	4.841	4.637	4.439	4.247	4.061	3.880
21	—	—	—	—	—	—	4.674	4.476	4.285	4.099	3.919	3.745
22	—	—	—	—	—	—	—	4.322	4.136	3.956	3.782	3.614
23	—	—	—	—	—	—	—	—	3.993	3.819	3.651	3.488
24	—	—	—	—	—	—	—	—	—	3.686	3.524	3.367
25	—	—	—	—	—	—	—	—	—	—	3.401	3.250
26	—	—	—	—	—	—	—	—	—	—	—	3.137
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	4.430	4.231	4.038	3.854	3.677	3.508	3.347	3.194	3.049	2.911	2.781	2.657
16	4.275	4.082	3.896	3.718	3.548	3.385	3.230	3.082	2.942	2.809	2.683	2.565
17	4.125	3.939	3.760	3.588	3.423	3.266	3.116	2.974	2.839	2.711	2.590	2.475
18	3.980	3.801	3.628	3.462	3.303	3.152	3.007	2.870	2.740	2.616	2.499	2.389
19	3.841	3.667	3.500	3.340	3.187	3.041	2.902	2.769	2.644	2.525	2.412	2.306
20	3.707	3.539	3.378	3.223	3.076	2.935	2.800	2.673	2.551	2.437	2.328	2.225
21	3.577	3.415	3.260	3.111	2.968	2.832	2.702	2.579	2.462	2.352	2.247	2.148
22	3.452	3.296	3.146	3.002	2.864	2.733	2.608	2.489	2.376	2.270	2.169	2.073
23	3.332	3.181	3.036	2.897	2.764	2.638	2.517	2.402	2.294	2.191	2.093	2.001
24	3.215	3.070	2.930	2.796	2.668	2.546	2.429	2.319	2.214	2.114	2.021	1.932
25	3.103	2.963	2.828	2.698	2.575	2.457	2.345	2.238	2.137	2.041	1.950	1.865
26	2.995	2.860	2.729	2.604	2.485	2.371	2.263	2.160	2.063	1.970	1.883	1.800
27	2.891	2.760	2.634	2.514	2.398	2.289	2.184	2.085	1.991	1.902	1.818	1.738
28	—	2.664	2.542	2.426	2.315	2.209	2.108	2.013	1.922	1.836	1.755	1.678
29	—	—	2.454	2.342	2.235	2.132	2.035	1.943	1.855	1.772	1.694	1.620
30+	—	—	—	2.260	2.157	2.058	1.965	1.875	1.791	1.711	1.635	1.564
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	2.541	2.431	2.328	2.231	2.139	2.053	1.972	1.896	1.824	1.757	1.694	1.635
16	2.452	2.347	2.247	2.153	2.065	1.982	1.904	1.830	1.761	1.697	1.636	1.578

表 C.3 男性结肠癌 ERR_{16y} 值 (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
17	2.367	2.265	2.169	2.078	1.993	1.913	1.838	1.767	1.701	1.638	1.579	1.524
18	2.285	2.186	2.094	2.006	1.924	1.847	1.774	1.706	1.642	1.582	1.525	1.472
19	2.205	2.110	2.021	1.937	1.858	1.783	1.713	1.647	1.586	1.527	1.473	1.422
20	2.128	2.037	1.951	1.870	1.793	1.722	1.654	1.591	1.531	1.475	1.422	1.373
21	2.054	1.966	1.883	1.805	1.731	1.662	1.597	1.536	1.478	1.424	1.374	1.326
22	1.983	1.898	1.818	1.743	1.672	1.605	1.542	1.483	1.428	1.376	1.327	1.280
23	1.914	1.832	1.755	1.682	1.614	1.550	1.489	1.432	1.379	1.328	1.281	1.237
24	1.848	1.769	1.694	1.624	1.558	1.496	1.438	1.383	1.331	1.283	1.237	1.194
25	1.784	1.708	1.636	1.568	1.505	1.445	1.389	1.336	1.286	1.239	1.195	1.154
26	1.722	1.649	1.580	1.514	1.453	1.395	1.341	1.290	1.242	1.197	1.154	1.114
27	1.663	1.592	1.525	1.462	1.403	1.347	1.295	1.246	1.199	1.156	1.115	1.076
28	1.605	1.537	1.473	1.412	1.355	1.301	1.251	1.203	1.158	1.116	1.077	1.040
29	1.550	1.484	1.422	1.363	1.308	1.257	1.208	1.162	1.119	1.078	1.040	1.004
30+	1.496	1.433	1.373	1.317	1.263	1.214	1.167	1.122	1.081	1.042	1.005	0.970
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	1.579	1.527	1.477	1.431	1.388	1.347	1.308	1.272	1.238	1.206	1.176	1.148
16	1.525	1.474	1.427	1.382	1.340	1.301	1.264	1.229	1.196	1.165	1.136	1.109
17	1.472	1.424	1.378	1.335	1.294	1.256	1.220	1.187	1.155	1.125	1.097	1.071
18	1.422	1.375	1.331	1.289	1.250	1.213	1.179	1.146	1.116	1.087	1.060	1.034
19	1.373	1.328	1.285	1.245	1.208	1.172	1.139	1.107	1.078	1.050	1.024	0.999
20	1.326	1.283	1.241	1.203	1.166	1.132	1.100	1.070	1.041	1.014	0.989	0.965
21	1.281	1.239	1.199	1.162	1.127	1.094	1.063	1.033	1.006	0.980	0.956	0.933
22	1.237	1.196	1.158	1.122	1.088	1.056	1.026	0.998	0.972	0.947	0.923	0.901
23	1.195	1.156	1.119	1.084	1.051	1.021	0.992	0.964	0.939	0.915	0.892	0.871
24	1.154	1.116	1.081	1.047	1.016	0.986	0.958	0.932	0.907	0.884	0.862	0.841
25	1.115	1.078	1.044	1.012	0.981	0.953	0.926	0.900	0.876	0.854	0.833	0.813
26	1.077	1.042	1.008	0.977	0.948	0.920	0.894	0.870	0.847	0.825	0.804	0.785
27	1.040	1.006	0.974	0.944	0.916	0.889	0.864	0.840	0.818	0.797	0.777	0.759
28	1.005	0.972	0.941	0.912	0.885	0.859	0.835	0.812	0.790	0.770	0.751	0.733
29	0.971	0.939	0.909	0.881	0.855	0.830	0.807	0.785	0.764	0.744	0.726	0.708
30+	0.938	0.907	0.879	0.851	0.826	0.802	0.779	0.758	0.738	0.719	0.701	0.685

表 C.3 男性结肠癌 ERR_{16y} 值 (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	1.121	1.096	1.072	1.050	1.029	1.010	0.991	0.974	0.957	0.942	0.928	0.914
16	1.083	1.059	1.036	1.014	0.994	0.975	0.957	0.941	0.925	0.910	0.896	0.883
17	1.046	1.023	1.001	0.980	0.960	0.942	0.925	0.909	0.893	0.879	0.865	0.853
18	1.010	0.988	0.967	0.947	0.928	0.910	0.893	0.878	0.863	0.849	0.836	0.824
19	0.976	0.954	0.934	0.914	0.896	0.879	0.863	0.848	0.833	0.820	0.807	0.795
20	0.943	0.922	0.902	0.883	0.866	0.849	0.834	0.819	0.805	0.792	0.780	0.768
21	0.911	0.891	0.871	0.853	0.836	0.820	0.805	0.791	0.778	0.765	0.753	0.742
22	0.880	0.860	0.842	0.825	0.808	0.793	0.778	0.764	0.751	0.739	0.728	0.717
23	0.850	0.831	0.813	0.797	0.781	0.766	0.752	0.738	0.726	0.714	0.703	0.693
24	0.822	0.803	0.786	0.770	0.754	0.740	0.726	0.713	0.701	0.690	0.679	0.669
25	0.794	0.776	0.759	0.744	0.729	0.715	0.702	0.689	0.678	0.667	0.656	0.646
26	0.767	0.750	0.734	0.719	0.704	0.691	0.678	0.666	0.655	0.644	0.634	0.624
27	0.741	0.725	0.709	0.694	0.680	0.667	0.655	0.643	0.633	0.622	0.612	0.603
28	0.716	0.700	0.685	0.671	0.657	0.645	0.633	0.622	0.611	0.601	0.592	0.583
29	0.692	0.677	0.662	0.648	0.635	0.623	0.612	0.601	0.591	0.581	0.572	0.563
30+	0.669	0.654	0.640	0.626	0.614	0.602	0.591	0.581	0.571	0.561	0.552	0.544
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.901	0.889	0.878	0.867	0.857	0.848	0.839	0.830	0.822	0.815		
16	0.870	0.859	0.848	0.838	0.828	0.819	0.810	0.802	0.794	0.787		
17	0.841	0.829	0.819	0.809	0.799	0.791	0.782	0.774	0.767	0.760		
18	0.812	0.801	0.791	0.781	0.772	0.763	0.755	0.748	0.740	0.733		
19	0.784	0.774	0.764	0.754	0.746	0.737	0.729	0.722	0.715	0.708		
20	0.758	0.747	0.738	0.729	0.720	0.712	0.704	0.697	0.690	0.684		
21	0.732	0.722	0.713	0.704	0.695	0.688	0.680	0.673	0.667	0.660		
22	0.707	0.697	0.688	0.680	0.672	0.664	0.657	0.650	0.644	0.638		
23	0.683	0.674	0.665	0.657	0.649	0.641	0.634	0.628	0.622	0.616		
24	0.660	0.651	0.642	0.634	0.627	0.619	0.613	0.606	0.600	0.594		
25	0.637	0.628	0.620	0.613	0.605	0.598	0.592	0.586	0.580	0.574		
26	0.616	0.607	0.599	0.592	0.585	0.578	0.572	0.566	0.560	0.554		
27	0.595	0.587	0.579	0.572	0.565	0.558	0.552	0.546	0.541	0.535		
28	0.575	0.567	0.559	0.552	0.546	0.539	0.533	0.528	0.522	0.517		
29	0.555	0.547	0.540	0.533	0.527	0.521	0.515	0.510	0.504	0.499		
30+	0.536	0.529	0.522	0.515	0.509	0.503	0.498	0.492	0.487	0.482		

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	2.603	2.412	2.246	2.101	1.971	1.854	1.747	1.649	1.558	1.474	1.396	1.324
16	—	2.338	2.178	2.037	1.911	1.797	1.693	1.598	1.510	1.429	1.353	1.283
17	—	—	2.111	1.974	1.852	1.742	1.641	1.549	1.463	1.384	1.311	1.243
18	—	—	—	1.914	1.795	1.688	1.590	1.501	1.418	1.341	1.270	1.204
19	—	—	—	—	1.740	1.636	1.541	1.454	1.374	1.300	1.231	1.167
20	—	—	—	—	—	1.586	1.494	1.409	1.331	1.259	1.193	1.131
21	—	—	—	—	—	—	1.448	1.366	1.290	1.220	1.156	1.096
22	—	—	—	—	—	—	—	1.324	1.250	1.183	1.120	1.062
23	—	—	—	—	—	—	—	—	1.212	1.146	1.085	1.029
24	—	—	—	—	—	—	—	—	—	1.111	1.052	0.997
25	—	—	—	—	—	—	—	—	—	—	1.019	0.966
26	—	—	—	—	—	—	—	—	—	—	—	0.936
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	1.257	1.195	1.137	1.083	1.034	0.988	0.946	0.906	0.870	0.837	0.805	0.777
16	1.218	1.157	1.102	1.050	1.002	0.957	0.916	0.878	0.843	0.811	0.780	0.752
17	1.180	1.121	1.067	1.017	0.971	0.928	0.888	0.851	0.817	0.785	0.756	0.729
18	1.143	1.087	1.034	0.986	0.941	0.899	0.860	0.825	0.792	0.761	0.733	0.706
19	1.108	1.053	1.002	0.955	0.911	0.871	0.834	0.799	0.767	0.737	0.710	0.684
20	1.073	1.020	0.971	0.925	0.883	0.844	0.808	0.774	0.743	0.715	0.688	0.663
21	1.040	0.989	0.941	0.897	0.856	0.818	0.783	0.750	0.720	0.692	0.667	0.643
22	1.008	0.958	0.912	0.869	0.829	0.792	0.759	0.727	0.698	0.671	0.646	0.623
23	0.977	0.928	0.883	0.842	0.803	0.768	0.735	0.705	0.676	0.650	0.626	0.603
24	0.946	0.899	0.856	0.816	0.779	0.744	0.712	0.683	0.655	0.630	0.607	0.585
25	0.917	0.872	0.830	0.791	0.755	0.721	0.690	0.662	0.635	0.611	0.588	0.567
26	0.889	0.845	0.804	0.766	0.731	0.699	0.669	0.641	0.615	0.592	0.570	0.549
27	0.861	0.818	0.779	0.742	0.709	0.677	0.648	0.621	0.596	0.573	0.552	0.532
28	—	0.793	0.755	0.719	0.687	0.656	0.628	0.602	0.578	0.556	0.535	0.516
29	—	—	0.732	0.697	0.665	0.636	0.609	0.584	0.560	0.539	0.518	0.500
30+	—	—	—	0.676	0.645	0.616	0.590	0.566	0.543	0.522	0.502	0.484
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	0.750	0.725	0.702	0.681	0.661	0.643	0.626	0.610	0.596	0.583	0.570	0.559
16	0.726	0.702	0.680	0.660	0.641	0.623	0.606	0.591	0.577	0.564	0.553	0.542

表 C.4 男性肝癌 ERR_{16y} 值 (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
17	0.704	0.681	0.659	0.639	0.621	0.603	0.588	0.573	0.559	0.547	0.535	0.524
18	0.682	0.660	0.639	0.619	0.601	0.585	0.569	0.555	0.542	0.530	0.518	0.508
19	0.661	0.639	0.619	0.600	0.583	0.566	0.551	0.538	0.525	0.513	0.502	0.492
20	0.640	0.619	0.600	0.581	0.564	0.549	0.534	0.521	0.508	0.497	0.486	0.476
21	0.621	0.600	0.581	0.563	0.547	0.532	0.518	0.505	0.492	0.481	0.471	0.461
22	0.601	0.581	0.563	0.546	0.530	0.515	0.501	0.489	0.477	0.466	0.456	0.447
23	0.583	0.563	0.545	0.529	0.513	0.499	0.486	0.474	0.462	0.452	0.442	0.433
24	0.565	0.546	0.529	0.512	0.497	0.484	0.471	0.459	0.448	0.437	0.428	0.419
25	0.547	0.529	0.512	0.497	0.482	0.469	0.456	0.444	0.434	0.424	0.415	0.406
26	0.530	0.513	0.496	0.481	0.467	0.454	0.442	0.431	0.420	0.411	0.402	0.393
27	0.514	0.497	0.481	0.466	0.453	0.440	0.428	0.417	0.407	0.398	0.389	0.381
28	0.498	0.481	0.466	0.452	0.439	0.426	0.415	0.404	0.394	0.385	0.377	0.369
29	0.483	0.467	0.452	0.438	0.425	0.413	0.402	0.392	0.382	0.373	0.365	0.358
30+	0.468	0.452	0.438	0.424	0.412	0.400	0.389	0.379	0.370	0.362	0.354	0.346
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	0.549	0.539	0.531	0.523	0.515	0.509	0.503	0.497	0.492	0.488	0.484	0.480
16	0.531	0.522	0.514	0.506	0.499	0.493	0.487	0.481	0.476	0.472	0.468	0.464
17	0.515	0.506	0.497	0.490	0.483	0.477	0.471	0.466	0.461	0.457	0.453	0.449
18	0.498	0.490	0.482	0.474	0.468	0.461	0.456	0.451	0.446	0.442	0.438	0.434
19	0.483	0.474	0.466	0.459	0.453	0.447	0.441	0.436	0.432	0.428	0.424	0.420
20	0.467	0.459	0.452	0.445	0.438	0.432	0.427	0.422	0.418	0.414	0.410	0.406
21	0.453	0.445	0.437	0.430	0.424	0.419	0.413	0.409	0.404	0.400	0.397	0.393
22	0.438	0.431	0.423	0.417	0.411	0.405	0.400	0.395	0.391	0.387	0.384	0.380
23	0.425	0.417	0.410	0.404	0.398	0.392	0.387	0.383	0.379	0.375	0.371	0.368
24	0.411	0.404	0.397	0.391	0.385	0.380	0.375	0.370	0.366	0.363	0.359	0.356
25	0.398	0.391	0.384	0.378	0.373	0.368	0.363	0.359	0.355	0.351	0.348	0.344
26	0.386	0.379	0.372	0.366	0.361	0.356	0.351	0.347	0.343	0.340	0.336	0.333
27	0.374	0.367	0.361	0.355	0.349	0.345	0.340	0.336	0.332	0.329	0.325	0.322
28	0.362	0.355	0.349	0.343	0.338	0.334	0.329	0.325	0.321	0.318	0.315	0.312
29	0.351	0.344	0.338	0.333	0.328	0.323	0.319	0.315	0.311	0.308	0.305	0.302
30+	0.340	0.333	0.327	0.322	0.317	0.313	0.308	0.305	0.301	0.298	0.295	0.292

表 C.4 男性肝癌 ERR_{16y} 值 (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	0.477	0.473	0.471	0.468	0.466	0.464	0.462	0.460	0.459	0.458	0.458	0.459
16	0.461	0.458	0.455	0.452	0.450	0.448	0.446	0.445	0.444	0.443	0.443	0.443
17	0.446	0.443	0.440	0.437	0.435	0.433	0.431	0.430	0.429	0.428	0.428	0.428
18	0.431	0.428	0.425	0.423	0.421	0.419	0.417	0.415	0.414	0.413	0.413	0.414
19	0.417	0.414	0.411	0.409	0.407	0.405	0.403	0.401	0.400	0.400	0.399	0.400
20	0.403	0.400	0.398	0.395	0.393	0.391	0.389	0.388	0.387	0.386	0.386	0.386
21	0.390	0.387	0.385	0.382	0.380	0.378	0.376	0.375	0.374	0.373	0.373	0.373
22	0.377	0.375	0.372	0.370	0.368	0.366	0.364	0.362	0.361	0.360	0.360	0.360
23	0.365	0.362	0.360	0.357	0.355	0.353	0.352	0.350	0.349	0.348	0.348	0.348
24	0.353	0.350	0.348	0.346	0.344	0.342	0.340	0.339	0.337	0.337	0.336	0.336
25	0.342	0.339	0.337	0.334	0.332	0.330	0.329	0.327	0.326	0.325	0.325	0.325
26	0.330	0.328	0.325	0.323	0.321	0.319	0.318	0.316	0.315	0.314	0.314	0.314
27	0.320	0.317	0.315	0.313	0.311	0.309	0.307	0.306	0.305	0.304	0.303	0.303
28	0.309	0.307	0.304	0.302	0.300	0.299	0.297	0.296	0.294	0.294	0.293	0.293
29	0.299	0.297	0.295	0.292	0.290	0.289	0.287	0.286	0.285	0.284	0.283	0.283
30+	0.289	0.287	0.285	0.283	0.281	0.279	0.278	0.276	0.275	0.274	0.274	0.274
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.461	0.463	0.467	0.473	0.481	0.492	0.506	0.525	0.551	0.584		
16	0.445	0.447	0.451	0.457	0.464	0.475	0.489	0.507	0.531	0.562		
17	0.430	0.432	0.436	0.441	0.448	0.458	0.471	0.489	0.512	0.542		
18	0.415	0.417	0.421	0.426	0.433	0.442	0.455	0.471	0.493	0.523		
19	0.401	0.403	0.406	0.411	0.418	0.427	0.439	0.455	0.476	0.504		
20	0.387	0.389	0.392	0.397	0.403	0.412	0.423	0.439	0.459	0.485		
21	0.374	0.376	0.379	0.383	0.389	0.397	0.408	0.423	0.442	0.468		
22	0.361	0.363	0.366	0.370	0.376	0.383	0.394	0.408	0.427	0.451		
23	0.349	0.350	0.353	0.357	0.363	0.370	0.380	0.394	0.411	0.435		
24	0.337	0.339	0.341	0.345	0.350	0.357	0.367	0.380	0.397	0.419		
25	0.326	0.327	0.329	0.333	0.338	0.345	0.354	0.366	0.383	0.404		
26	0.314	0.316	0.318	0.321	0.326	0.333	0.342	0.353	0.369	0.390		
27	0.304	0.305	0.307	0.310	0.315	0.321	0.330	0.341	0.356	0.376		
28	0.294	0.295	0.297	0.300	0.304	0.310	0.318	0.329	0.343	0.362		
29	0.284	0.285	0.287	0.289	0.293	0.299	0.307	0.317	0.331	0.349		
30+	0.274	0.275	0.277	0.279	0.283	0.289	0.296	0.306	0.319	0.337		

表 C.5 男性外照射致肺癌 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	1.139	1.067	1.009	0.961	0.923	0.891	0.865	0.843	0.824	0.807	0.792	0.777
16	—	1.034	0.978	0.931	0.894	0.863	0.837	0.815	0.797	0.780	0.765	0.751
17	—	—	0.947	0.902	0.866	0.835	0.810	0.789	0.771	0.755	0.740	0.726
18	—	—	—	0.874	0.838	0.809	0.784	0.763	0.745	0.730	0.715	0.702
19	—	—	—	—	0.812	0.783	0.759	0.739	0.721	0.706	0.691	0.678
20	—	—	—	—	—	0.758	0.735	0.715	0.698	0.682	0.669	0.656
21	—	—	—	—	—	—	0.711	0.692	0.675	0.660	0.646	0.634
22	—	—	—	—	—	—	—	0.669	0.653	0.638	0.625	0.613
23	—	—	—	—	—	—	—	—	0.632	0.617	0.604	0.592
24	—	—	—	—	—	—	—	—	—	0.597	0.584	0.572
25	—	—	—	—	—	—	—	—	—	—	0.565	0.553
26	—	—	—	—	—	—	—	—	—	—	—	0.535
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	0.764	0.750	0.736	0.722	0.708	0.693	0.678	0.663	0.647	0.630	0.614	0.597
16	0.738	0.725	0.711	0.698	0.684	0.669	0.655	0.640	0.624	0.608	0.592	0.576
17	0.713	0.700	0.687	0.674	0.660	0.646	0.632	0.617	0.602	0.587	0.572	0.556
18	0.689	0.676	0.663	0.651	0.637	0.624	0.610	0.596	0.581	0.567	0.552	0.537
19	0.666	0.653	0.641	0.628	0.616	0.602	0.589	0.575	0.561	0.547	0.532	0.518
20	0.643	0.631	0.619	0.607	0.594	0.582	0.569	0.555	0.542	0.528	0.514	0.500
21	0.622	0.610	0.598	0.586	0.574	0.562	0.549	0.536	0.523	0.509	0.496	0.482
22	0.601	0.589	0.578	0.566	0.554	0.542	0.530	0.517	0.505	0.492	0.479	0.465
23	0.581	0.569	0.558	0.547	0.535	0.524	0.512	0.500	0.487	0.475	0.462	0.449
24	0.561	0.550	0.539	0.528	0.517	0.506	0.494	0.482	0.470	0.458	0.446	0.434
25	0.542	0.532	0.521	0.510	0.499	0.488	0.477	0.466	0.454	0.442	0.430	0.418
26	0.524	0.514	0.503	0.493	0.482	0.471	0.461	0.449	0.438	0.427	0.415	0.404
27	0.507	0.496	0.486	0.476	0.466	0.455	0.445	0.434	0.423	0.412	0.401	0.390
28	—	0.480	0.470	0.460	0.450	0.440	0.429	0.419	0.408	0.398	0.387	0.376
29	—	—	0.454	0.444	0.434	0.425	0.415	0.405	0.394	0.384	0.374	0.363
30+	—	—	—	0.429	0.420	0.410	0.400	0.391	0.381	0.371	0.361	0.351
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	0.581	0.564	0.547	0.531	0.514	0.499	0.483	0.468	0.453	0.439	0.426	0.413
16	0.560	0.544	0.528	0.512	0.496	0.481	0.466	0.451	0.437	0.424	0.411	0.398

表 C.5 男性外照射致肺癌 ERR_{16y} 值 (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
17	0.540	0.525	0.509	0.494	0.479	0.464	0.450	0.436	0.422	0.409	0.396	0.384
18	0.522	0.506	0.491	0.477	0.462	0.448	0.434	0.420	0.407	0.395	0.382	0.371
19	0.503	0.489	0.474	0.460	0.446	0.432	0.419	0.406	0.393	0.381	0.369	0.358
20	0.486	0.472	0.458	0.444	0.430	0.417	0.404	0.391	0.379	0.367	0.356	0.345
21	0.469	0.455	0.442	0.428	0.415	0.402	0.390	0.378	0.366	0.354	0.344	0.333
22	0.452	0.439	0.426	0.413	0.401	0.388	0.376	0.364	0.353	0.342	0.331	0.321
23	0.436	0.424	0.411	0.399	0.386	0.375	0.363	0.352	0.341	0.330	0.320	0.310
24	0.421	0.409	0.397	0.385	0.373	0.361	0.350	0.339	0.329	0.319	0.309	0.299
25	0.407	0.395	0.383	0.371	0.360	0.349	0.338	0.327	0.317	0.307	0.298	0.289
26	0.392	0.381	0.370	0.358	0.347	0.337	0.326	0.316	0.306	0.297	0.288	0.279
27	0.379	0.368	0.357	0.346	0.335	0.325	0.315	0.305	0.295	0.286	0.278	0.269
28	0.366	0.355	0.344	0.334	0.324	0.314	0.304	0.294	0.285	0.276	0.268	0.260
29	0.353	0.342	0.332	0.322	0.312	0.303	0.293	0.284	0.275	0.267	0.259	0.251
30+	0.341	0.331	0.321	0.311	0.301	0.292	0.283	0.274	0.266	0.257	0.250	0.242
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	0.400	0.389	0.377	0.367	0.357	0.348	0.339	0.331	0.323	0.316	0.310	0.305
16	0.386	0.375	0.364	0.354	0.344	0.335	0.327	0.319	0.312	0.305	0.299	0.294
17	0.373	0.362	0.351	0.341	0.332	0.324	0.315	0.308	0.301	0.295	0.289	0.284
18	0.360	0.349	0.339	0.330	0.321	0.312	0.304	0.297	0.290	0.284	0.279	0.274
19	0.347	0.337	0.327	0.318	0.309	0.301	0.294	0.287	0.280	0.274	0.269	0.264
20	0.335	0.325	0.316	0.307	0.299	0.291	0.283	0.277	0.270	0.265	0.260	0.255
21	0.323	0.314	0.305	0.296	0.288	0.281	0.274	0.267	0.261	0.256	0.250	0.246
22	0.312	0.303	0.294	0.286	0.278	0.271	0.264	0.258	0.252	0.247	0.242	0.237
23	0.301	0.292	0.284	0.276	0.268	0.261	0.255	0.249	0.243	0.238	0.233	0.229
24	0.290	0.282	0.274	0.266	0.259	0.252	0.246	0.240	0.235	0.230	0.225	0.221
25	0.280	0.272	0.264	0.257	0.250	0.243	0.237	0.232	0.226	0.222	0.217	0.213
26	0.270	0.263	0.255	0.248	0.241	0.235	0.229	0.224	0.219	0.214	0.210	0.206
27	0.261	0.253	0.246	0.239	0.233	0.227	0.221	0.216	0.211	0.206	0.202	0.199
28	0.252	0.245	0.238	0.231	0.225	0.219	0.213	0.208	0.204	0.199	0.195	0.192
29	0.243	0.236	0.229	0.223	0.217	0.211	0.206	0.201	0.197	0.192	0.189	0.185
30+	0.235	0.228	0.221	0.215	0.209	0.204	0.199	0.194	0.190	0.186	0.182	0.179

表 C.5 男性外照射致肺癌 ERR_{16y} 值 (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	0.300	0.296	0.292	0.289	0.287	0.285	0.285	0.285	0.286	0.288	0.291	0.296
16	0.289	0.285	0.282	0.279	0.277	0.275	0.275	0.275	0.276	0.278	0.281	0.285
17	0.279	0.275	0.272	0.269	0.267	0.265	0.265	0.265	0.266	0.268	0.271	0.275
18	0.269	0.265	0.262	0.259	0.257	0.256	0.255	0.255	0.256	0.258	0.261	0.265
19	0.260	0.256	0.253	0.250	0.248	0.247	0.246	0.246	0.247	0.249	0.251	0.255
20	0.251	0.247	0.244	0.241	0.240	0.238	0.238	0.238	0.238	0.240	0.242	0.246
21	0.242	0.238	0.235	0.233	0.231	0.230	0.229	0.229	0.230	0.231	0.234	0.237
22	0.233	0.230	0.227	0.225	0.223	0.222	0.221	0.221	0.222	0.223	0.225	0.229
23	0.225	0.222	0.219	0.217	0.215	0.214	0.213	0.213	0.214	0.215	0.217	0.220
24	0.217	0.214	0.212	0.209	0.208	0.206	0.206	0.206	0.206	0.207	0.210	0.212
25	0.210	0.207	0.204	0.202	0.200	0.199	0.198	0.198	0.199	0.200	0.202	0.205
26	0.202	0.200	0.197	0.195	0.193	0.192	0.191	0.191	0.192	0.193	0.195	0.197
27	0.195	0.193	0.190	0.188	0.186	0.185	0.185	0.185	0.185	0.186	0.188	0.190
28	0.189	0.186	0.183	0.181	0.180	0.179	0.178	0.178	0.178	0.180	0.181	0.184
29	0.182	0.179	0.177	0.175	0.174	0.173	0.172	0.172	0.172	0.173	0.175	0.177
30+	0.176	0.173	0.171	0.169	0.168	0.167	0.166	0.166	0.166	0.167	0.169	0.171
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.301	0.309	0.318	0.329	0.343	0.359	0.379	0.403	0.432	0.467		
16	0.290	0.297	0.306	0.317	0.330	0.346	0.365	0.388	0.416	0.449		
17	0.280	0.287	0.295	0.305	0.318	0.333	0.351	0.373	0.400	0.432		
18	0.270	0.276	0.284	0.294	0.306	0.321	0.338	0.359	0.385	0.415		
19	0.260	0.266	0.274	0.283	0.295	0.309	0.326	0.346	0.370	0.400		
20	0.251	0.256	0.264	0.273	0.284	0.297	0.313	0.333	0.356	0.384		
21	0.242	0.247	0.254	0.263	0.273	0.286	0.302	0.320	0.343	0.370		
22	0.233	0.238	0.245	0.253	0.263	0.276	0.291	0.308	0.330	0.356		
23	0.224	0.230	0.236	0.244	0.254	0.265	0.280	0.297	0.317	0.342		
24	0.216	0.221	0.227	0.235	0.244	0.256	0.269	0.286	0.306	0.329		
25	0.208	0.213	0.219	0.226	0.235	0.246	0.259	0.275	0.294	0.317		
26	0.201	0.206	0.211	0.218	0.227	0.237	0.250	0.265	0.283	0.305		
27	0.194	0.198	0.204	0.210	0.218	0.228	0.240	0.255	0.272	0.293		
28	0.187	0.191	0.196	0.203	0.210	0.220	0.231	0.245	0.262	0.282		
29	0.180	0.184	0.189	0.195	0.203	0.212	0.223	0.236	0.252	0.272		
30+	0.174	0.177	0.182	0.188	0.195	0.204	0.215	0.227	0.243	0.261		

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	3.858	3.539	3.267	3.035	2.835	2.662	2.511	2.378	2.262	2.159	2.066	1.983
16	—	3.434	3.170	2.944	2.750	2.582	2.435	2.307	2.193	2.093	2.003	1.923
17	—	—	3.076	2.857	2.668	2.504	2.362	2.237	2.127	2.029	1.942	1.864
18	—	—	—	2.772	2.588	2.429	2.291	2.169	2.062	1.967	1.883	1.806
19	—	—	—	—	2.511	2.357	2.222	2.104	2.000	1.908	1.825	1.751
20	—	—	—	—	—	2.286	2.155	2.041	1.939	1.850	1.769	1.697
21	—	—	—	—	—	—	2.090	1.979	1.881	1.793	1.715	1.645
22	—	—	—	—	—	—	—	1.919	1.824	1.739	1.663	1.595
23	—	—	—	—	—	—	—	—	1.769	1.686	1.612	1.546
24	—	—	—	—	—	—	—	—	—	1.635	1.563	1.499
25	—	—	—	—	—	—	—	—	—	—	1.516	1.453
26	—	—	—	—	—	—	—	—	—	—	—	1.408
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	1.908	1.840	1.777	1.720	1.666	1.616	1.569	1.524	1.483	1.443	1.405	1.370
16	1.850	1.783	1.722	1.666	1.614	1.565	1.519	1.476	1.435	1.397	1.360	1.326
17	1.793	1.728	1.669	1.614	1.563	1.516	1.471	1.429	1.390	1.352	1.317	1.283
18	1.737	1.675	1.617	1.564	1.514	1.468	1.425	1.384	1.346	1.309	1.275	1.242
19	1.684	1.623	1.567	1.515	1.467	1.422	1.380	1.340	1.303	1.267	1.234	1.202
20	1.632	1.573	1.518	1.468	1.421	1.377	1.336	1.298	1.261	1.227	1.195	1.164
21	1.582	1.524	1.471	1.422	1.376	1.334	1.294	1.257	1.221	1.188	1.156	1.126
22	1.533	1.477	1.425	1.378	1.333	1.292	1.253	1.217	1.183	1.150	1.120	1.090
23	1.486	1.431	1.381	1.335	1.292	1.252	1.214	1.179	1.145	1.114	1.084	1.056
24	1.440	1.387	1.338	1.293	1.251	1.212	1.176	1.141	1.109	1.078	1.049	1.022
25	1.396	1.344	1.297	1.253	1.212	1.174	1.139	1.105	1.074	1.044	1.016	0.989
26	1.353	1.303	1.257	1.214	1.175	1.138	1.103	1.071	1.040	1.011	0.984	0.958
27	1.312	1.263	1.218	1.176	1.138	1.102	1.068	1.037	1.007	0.979	0.952	0.927
28	—	1.224	1.180	1.140	1.102	1.068	1.035	1.004	0.975	0.948	0.922	0.898
29	—	—	1.144	1.104	1.068	1.034	1.002	0.973	0.945	0.918	0.893	0.869
30+	—	—	—	1.070	1.035	1.002	0.971	0.942	0.915	0.889	0.865	0.841
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	1.336	1.304	1.273	1.244	1.217	1.191	1.166	1.143	1.122	1.101	1.083	1.065
16	1.293	1.262	1.232	1.204	1.177	1.152	1.128	1.106	1.085	1.065	1.047	1.030

表 C.6 男性膀胱癌 ERR_{16y} 值 (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
17	1.251	1.221	1.192	1.165	1.139	1.115	1.091	1.070	1.049	1.030	1.012	0.996
18	1.211	1.182	1.154	1.127	1.102	1.078	1.056	1.035	1.015	0.996	0.979	0.963
19	1.172	1.143	1.116	1.091	1.066	1.043	1.021	1.001	0.982	0.964	0.947	0.931
20	1.134	1.107	1.080	1.055	1.032	1.009	0.988	0.968	0.949	0.932	0.915	0.900
21	1.098	1.071	1.045	1.021	0.998	0.976	0.956	0.937	0.918	0.901	0.885	0.871
22	1.063	1.037	1.012	0.988	0.966	0.945	0.925	0.906	0.888	0.872	0.856	0.842
23	1.029	1.003	0.979	0.956	0.935	0.914	0.895	0.876	0.859	0.843	0.828	0.814
24	0.996	0.971	0.948	0.925	0.904	0.884	0.866	0.848	0.831	0.816	0.801	0.787
25	0.964	0.940	0.917	0.896	0.875	0.856	0.837	0.820	0.804	0.789	0.775	0.761
26	0.933	0.910	0.888	0.867	0.847	0.828	0.810	0.794	0.778	0.763	0.749	0.736
27	0.903	0.881	0.859	0.839	0.819	0.801	0.784	0.768	0.753	0.738	0.725	0.712
28	0.874	0.852	0.832	0.812	0.793	0.775	0.759	0.743	0.728	0.714	0.701	0.689
29	0.847	0.825	0.805	0.786	0.767	0.750	0.734	0.719	0.704	0.691	0.678	0.666
30+	0.820	0.799	0.779	0.760	0.743	0.726	0.710	0.695	0.681	0.668	0.656	0.644
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	1.049	1.034	1.020	1.007	0.996	0.986	0.977	0.969	0.962	0.956	0.951	0.947
16	1.014	0.999	0.986	0.974	0.963	0.953	0.944	0.936	0.929	0.923	0.918	0.914
17	0.980	0.966	0.953	0.941	0.930	0.921	0.912	0.904	0.898	0.892	0.887	0.883
18	0.948	0.934	0.921	0.910	0.899	0.890	0.881	0.874	0.867	0.862	0.857	0.853
19	0.916	0.903	0.891	0.879	0.869	0.860	0.852	0.844	0.838	0.832	0.828	0.824
20	0.886	0.873	0.861	0.850	0.840	0.831	0.823	0.816	0.809	0.804	0.799	0.795
21	0.857	0.844	0.832	0.822	0.812	0.803	0.795	0.788	0.782	0.777	0.772	0.768
22	0.828	0.816	0.805	0.794	0.785	0.776	0.768	0.762	0.756	0.750	0.746	0.742
23	0.801	0.789	0.778	0.768	0.759	0.750	0.743	0.736	0.730	0.725	0.721	0.717
24	0.775	0.763	0.752	0.742	0.733	0.725	0.718	0.711	0.705	0.700	0.696	0.692
25	0.749	0.738	0.727	0.718	0.709	0.701	0.694	0.687	0.682	0.677	0.672	0.669
26	0.724	0.713	0.703	0.694	0.685	0.677	0.670	0.664	0.659	0.654	0.650	0.646
27	0.701	0.690	0.680	0.671	0.662	0.655	0.648	0.642	0.637	0.632	0.628	0.624
28	0.678	0.667	0.657	0.649	0.640	0.633	0.626	0.620	0.615	0.610	0.606	0.603
29	0.655	0.645	0.636	0.627	0.619	0.612	0.605	0.600	0.594	0.590	0.586	0.582
30+	0.634	0.624	0.615	0.606	0.599	0.592	0.585	0.580	0.575	0.570	0.566	0.563

表 C.6 男性膀胱癌 ERR_{16y} 值 (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	0.943	0.941	0.939	0.937	0.936	0.935	0.935	0.934	0.933	0.931	0.928	0.925
16	0.911	0.908	0.906	0.905	0.904	0.903	0.902	0.901	0.900	0.898	0.896	0.892
17	0.880	0.877	0.875	0.873	0.872	0.871	0.870	0.869	0.868	0.866	0.864	0.861
18	0.849	0.847	0.845	0.843	0.842	0.841	0.840	0.839	0.837	0.836	0.833	0.830
19	0.820	0.818	0.816	0.814	0.813	0.811	0.810	0.809	0.808	0.806	0.804	0.801
20	0.792	0.790	0.787	0.786	0.784	0.783	0.782	0.781	0.780	0.778	0.776	0.772
21	0.765	0.762	0.760	0.759	0.757	0.756	0.755	0.754	0.752	0.751	0.748	0.745
22	0.739	0.736	0.734	0.732	0.731	0.730	0.729	0.727	0.726	0.724	0.722	0.719
23	0.714	0.711	0.709	0.707	0.706	0.704	0.703	0.702	0.700	0.699	0.696	0.693
24	0.689	0.687	0.684	0.683	0.681	0.680	0.679	0.677	0.676	0.674	0.672	0.669
25	0.666	0.663	0.661	0.659	0.658	0.656	0.655	0.654	0.652	0.651	0.648	0.645
26	0.643	0.640	0.638	0.636	0.635	0.634	0.632	0.631	0.630	0.628	0.626	0.623
27	0.621	0.618	0.616	0.615	0.613	0.612	0.610	0.609	0.608	0.606	0.604	0.601
28	0.600	0.597	0.595	0.593	0.592	0.590	0.589	0.588	0.586	0.585	0.582	0.580
29	0.579	0.577	0.575	0.573	0.571	0.570	0.569	0.567	0.566	0.564	0.562	0.559
30+	0.560	0.557	0.555	0.553	0.552	0.550	0.549	0.548	0.546	0.544	0.542	0.540
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.920	0.914	0.907	0.897	0.885	0.871	0.854	0.835	0.814	0.790		
16	0.888	0.882	0.874	0.865	0.854	0.840	0.824	0.806	0.785	0.762		
17	0.856	0.850	0.843	0.834	0.823	0.810	0.795	0.777	0.757	0.734		
18	0.826	0.820	0.813	0.804	0.794	0.781	0.766	0.749	0.730	0.708		
19	0.796	0.791	0.784	0.776	0.765	0.753	0.739	0.723	0.704	0.683		
20	0.768	0.763	0.756	0.748	0.738	0.726	0.713	0.697	0.679	0.659		
21	0.741	0.736	0.730	0.722	0.712	0.701	0.687	0.672	0.655	0.636		
22	0.715	0.710	0.704	0.696	0.687	0.676	0.663	0.648	0.632	0.613		
23	0.690	0.685	0.679	0.671	0.662	0.652	0.639	0.625	0.609	0.592		
24	0.665	0.661	0.655	0.647	0.639	0.629	0.617	0.603	0.588	0.571		
25	0.642	0.637	0.632	0.625	0.616	0.606	0.595	0.582	0.567	0.550		
26	0.619	0.615	0.609	0.602	0.594	0.585	0.574	0.561	0.547	0.531		
27	0.597	0.593	0.588	0.581	0.573	0.564	0.554	0.541	0.528	0.512		
28	0.576	0.572	0.567	0.561	0.553	0.544	0.534	0.522	0.509	0.494		
29	0.556	0.552	0.547	0.541	0.534	0.525	0.515	0.504	0.491	0.477		
30+	0.537	0.533	0.528	0.522	0.515	0.506	0.497	0.486	0.474	0.460		

表 C.7 男性食管癌、骨和关节恶性肿瘤 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	14.498	12.141	10.289	8.812	7.621	6.650	5.850	5.185	4.627	4.156	3.755	3.411
16	—	11.781	9.983	8.550	7.394	6.451	5.674	5.029	4.488	4.030	3.641	3.307
17	—	—	9.686	8.295	7.173	6.258	5.504	4.877	4.352	3.908	3.530	3.206
18	—	—	—	8.048	6.959	6.071	5.339	4.731	4.221	3.790	3.423	3.108
19	—	—	—	—	6.751	5.889	5.179	4.588	4.093	3.675	3.318	3.013
20	—	—	—	—	—	5.713	5.024	4.450	3.970	3.564	3.218	2.921
21	—	—	—	—	—	—	4.873	4.317	3.850	3.456	3.120	2.832
22	—	—	—	—	—	—	—	4.187	3.734	3.351	3.025	2.745
23	—	—	—	—	—	—	—	—	3.621	3.250	2.933	2.661
24	—	—	—	—	—	—	—	—	—	3.151	2.844	2.580
25	—	—	—	—	—	—	—	—	—	—	2.758	2.502
26	—	—	—	—	—	—	—	—	—	—	—	2.425
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	3.114	2.855	2.628	2.428	2.251	2.092	1.950	1.821	1.705	1.598	1.500	1.411
16	3.018	2.767	2.547	2.353	2.180	2.027	1.888	1.764	1.650	1.547	1.452	1.365
17	2.925	2.681	2.468	2.279	2.112	1.963	1.829	1.708	1.598	1.498	1.406	1.321
18	2.836	2.599	2.391	2.208	2.046	1.901	1.771	1.654	1.547	1.450	1.361	1.279
19	2.749	2.519	2.317	2.140	1.982	1.842	1.715	1.601	1.498	1.404	1.317	1.238
20	2.664	2.441	2.246	2.073	1.920	1.784	1.661	1.551	1.450	1.359	1.275	1.198
21	2.583	2.366	2.176	2.009	1.860	1.728	1.609	1.502	1.404	1.316	1.234	1.160
22	2.503	2.293	2.109	1.946	1.802	1.674	1.558	1.454	1.360	1.274	1.195	1.123
23	2.427	2.223	2.044	1.886	1.746	1.621	1.509	1.408	1.317	1.233	1.157	1.087
24	2.352	2.154	1.981	1.828	1.692	1.571	1.462	1.364	1.275	1.194	1.120	1.052
25	2.280	2.088	1.919	1.771	1.639	1.522	1.416	1.321	1.235	1.156	1.084	1.018
26	2.211	2.024	1.860	1.716	1.588	1.474	1.372	1.279	1.196	1.119	1.050	0.986
27	2.143	1.962	1.803	1.663	1.539	1.428	1.329	1.239	1.158	1.084	1.016	0.954
28	—	1.901	1.747	1.611	1.491	1.383	1.287	1.200	1.121	1.050	0.984	0.924
29	—	—	1.693	1.561	1.444	1.340	1.247	1.162	1.086	1.016	0.953	0.894
30+	—	—	—	1.513	1.400	1.298	1.208	1.126	1.052	0.984	0.922	0.866
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	1.328	1.251	1.180	1.113	1.052	0.994	0.940	0.890	0.843	0.798	0.757	0.718
16	1.285	1.210	1.141	1.077	1.017	0.961	0.909	0.861	0.815	0.772	0.732	0.695

表 C.7 男性食管癌、骨和关节恶性肿瘤 ERR_{16y} 值 (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
17	1.243	1.171	1.104	1.042	0.984	0.930	0.880	0.832	0.788	0.747	0.708	0.672
18	1.203	1.133	1.069	1.008	0.952	0.900	0.851	0.805	0.762	0.722	0.685	0.650
19	1.165	1.097	1.034	0.976	0.921	0.871	0.823	0.779	0.737	0.699	0.662	0.628
20	1.127	1.061	1.001	0.944	0.891	0.842	0.796	0.753	0.713	0.676	0.641	0.608
21	1.091	1.027	0.968	0.913	0.862	0.815	0.770	0.729	0.690	0.654	0.620	0.588
22	1.056	0.994	0.937	0.884	0.834	0.788	0.745	0.705	0.668	0.632	0.600	0.569
23	1.022	0.962	0.907	0.855	0.807	0.763	0.721	0.682	0.646	0.612	0.580	0.550
24	0.989	0.931	0.878	0.828	0.781	0.738	0.698	0.660	0.625	0.592	0.561	0.532
25	0.957	0.901	0.849	0.801	0.756	0.714	0.675	0.639	0.604	0.573	0.543	0.515
26	0.927	0.872	0.822	0.775	0.732	0.691	0.653	0.618	0.585	0.554	0.525	0.498
27	0.897	0.844	0.795	0.750	0.708	0.669	0.632	0.598	0.566	0.536	0.508	0.482
28	0.868	0.817	0.770	0.726	0.685	0.647	0.611	0.578	0.547	0.518	0.491	0.466
29	0.841	0.791	0.745	0.703	0.663	0.626	0.592	0.560	0.530	0.502	0.475	0.451
30+	0.814	0.766	0.721	0.680	0.642	0.606	0.573	0.541	0.512	0.485	0.460	0.436
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	0.682	0.648	0.616	0.586	0.558	0.532	0.508	0.485	0.464	0.444	0.425	0.408
16	0.660	0.627	0.596	0.567	0.540	0.515	0.491	0.469	0.448	0.429	0.411	0.394
17	0.638	0.606	0.576	0.548	0.522	0.498	0.475	0.453	0.433	0.415	0.397	0.381
18	0.617	0.586	0.557	0.530	0.505	0.481	0.459	0.438	0.419	0.401	0.384	0.369
19	0.597	0.567	0.539	0.513	0.488	0.465	0.444	0.424	0.405	0.388	0.372	0.356
20	0.577	0.548	0.521	0.496	0.472	0.450	0.429	0.410	0.392	0.375	0.359	0.345
21	0.558	0.530	0.504	0.480	0.457	0.435	0.415	0.397	0.379	0.363	0.347	0.333
22	0.540	0.513	0.488	0.464	0.442	0.421	0.402	0.383	0.367	0.351	0.336	0.322
23	0.522	0.496	0.472	0.449	0.427	0.407	0.388	0.371	0.354	0.339	0.325	0.312
24	0.505	0.480	0.456	0.434	0.413	0.394	0.376	0.359	0.343	0.328	0.314	0.301
25	0.489	0.464	0.441	0.420	0.400	0.381	0.363	0.347	0.332	0.317	0.304	0.291
26	0.473	0.449	0.427	0.406	0.387	0.368	0.351	0.336	0.321	0.307	0.294	0.282
27	0.457	0.434	0.413	0.393	0.374	0.356	0.340	0.325	0.310	0.297	0.284	0.273
28	0.442	0.420	0.399	0.380	0.362	0.345	0.329	0.314	0.300	0.287	0.275	0.264
29	0.428	0.406	0.386	0.368	0.350	0.333	0.318	0.304	0.290	0.278	0.266	0.255
30+	0.414	0.393	0.374	0.356	0.339	0.323	0.308	0.294	0.281	0.269	0.257	0.247

表 C.7 男性食管癌、骨和关节恶性肿瘤 ERR_{16y} 值 (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	0.392	0.377	0.363	0.350	0.338	0.327	0.317	0.308	0.300	0.293	0.286	0.281
16	0.379	0.364	0.351	0.338	0.327	0.316	0.307	0.298	0.290	0.283	0.277	0.271
17	0.366	0.352	0.339	0.327	0.316	0.306	0.296	0.288	0.280	0.273	0.267	0.262
18	0.354	0.340	0.328	0.316	0.305	0.295	0.286	0.278	0.271	0.264	0.258	0.253
19	0.342	0.329	0.317	0.306	0.295	0.286	0.277	0.269	0.262	0.255	0.249	0.245
20	0.331	0.318	0.306	0.295	0.285	0.276	0.268	0.260	0.253	0.247	0.241	0.236
21	0.320	0.308	0.296	0.286	0.276	0.267	0.259	0.251	0.244	0.238	0.233	0.228
22	0.309	0.297	0.286	0.276	0.267	0.258	0.250	0.243	0.236	0.230	0.225	0.221
23	0.299	0.288	0.277	0.267	0.258	0.249	0.242	0.235	0.228	0.223	0.218	0.213
24	0.289	0.278	0.268	0.258	0.249	0.241	0.234	0.227	0.221	0.215	0.210	0.206
25	0.280	0.269	0.259	0.250	0.241	0.233	0.226	0.219	0.213	0.208	0.203	0.199
26	0.271	0.260	0.250	0.241	0.233	0.225	0.218	0.212	0.206	0.201	0.196	0.192
27	0.262	0.252	0.242	0.233	0.225	0.218	0.211	0.205	0.199	0.194	0.190	0.186
28	0.253	0.243	0.234	0.226	0.218	0.211	0.204	0.198	0.193	0.188	0.183	0.180
29	0.245	0.235	0.227	0.218	0.211	0.204	0.197	0.192	0.186	0.182	0.177	0.174
30+	0.237	0.228	0.219	0.211	0.204	0.197	0.191	0.185	0.180	0.175	0.171	0.168
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.276	0.272	0.270	0.268	0.267	0.268	0.270	0.274	0.279	0.286		
16	0.267	0.263	0.260	0.259	0.258	0.259	0.261	0.264	0.269	0.276		
17	0.258	0.254	0.251	0.250	0.249	0.250	0.251	0.255	0.259	0.266		
18	0.249	0.245	0.243	0.241	0.241	0.241	0.243	0.246	0.250	0.256		
19	0.240	0.237	0.235	0.233	0.232	0.233	0.234	0.237	0.241	0.247		
20	0.232	0.229	0.227	0.225	0.224	0.225	0.226	0.229	0.233	0.238		
21	0.224	0.221	0.219	0.217	0.216	0.217	0.218	0.221	0.224	0.230		
22	0.217	0.214	0.211	0.210	0.209	0.209	0.210	0.213	0.216	0.221		
23	0.209	0.206	0.204	0.203	0.202	0.202	0.203	0.205	0.209	0.214		
24	0.202	0.199	0.197	0.196	0.195	0.195	0.196	0.198	0.201	0.206		
25	0.195	0.193	0.190	0.189	0.188	0.188	0.189	0.191	0.194	0.199		
26	0.189	0.186	0.184	0.182	0.182	0.182	0.183	0.184	0.187	0.192		
27	0.183	0.180	0.178	0.176	0.175	0.175	0.176	0.178	0.181	0.185		
28	0.176	0.174	0.172	0.170	0.169	0.169	0.170	0.172	0.174	0.178		
29	0.170	0.168	0.166	0.164	0.164	0.163	0.164	0.166	0.168	0.172		
30+	0.165	0.162	0.160	0.159	0.158	0.158	0.158	0.160	0.162	0.166		

C.3 女性实体癌超额危险系数（乳腺癌和甲状腺癌除外）

女性几种实体癌的 ERR_{16y} 值见表C.8～表C.13。

表 C.8 女性胃癌 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	7.594	7.197	6.831	6.492	6.177	5.883	5.609	5.354	5.116	4.893	4.684	4.488
16	—	6.944	6.589	6.261	5.956	5.673	5.408	5.162	4.932	4.716	4.515	4.326
17	—	—	6.356	6.039	5.744	5.470	5.215	4.977	4.754	4.546	4.352	4.170
18	—	—	—	5.825	5.540	5.275	5.028	4.798	4.583	4.383	4.195	4.019
19	—	—	—	—	5.343	5.087	4.848	4.626	4.419	4.225	4.044	3.874
20	—	—	—	—	—	4.906	4.675	4.461	4.260	4.073	3.898	3.735
21	—	—	—	—	—	—	4.508	4.301	4.108	3.927	3.758	3.600
22	—	—	—	—	—	—	—	4.147	3.960	3.786	3.623	3.471
23	—	—	—	—	—	—	—	—	3.819	3.650	3.493	3.346
24	—	—	—	—	—	—	—	—	—	3.520	3.368	3.226
25	—	—	—	—	—	—	—	—	—	—	3.247	3.110
26	—	—	—	—	—	—	—	—	—	—	—	2.998
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	4.305	4.133	3.971	3.819	3.675	3.540	3.411	3.290	3.175	3.066	2.962	2.863
16	4.149	3.983	3.827	3.680	3.542	3.411	3.287	3.170	3.059	2.954	2.854	2.759
17	3.999	3.839	3.688	3.547	3.413	3.287	3.168	3.055	2.948	2.847	2.750	2.658
18	3.855	3.700	3.555	3.418	3.289	3.168	3.053	2.944	2.841	2.743	2.650	2.561
19	3.715	3.566	3.426	3.294	3.170	3.053	2.942	2.837	2.738	2.643	2.554	2.468
20	3.581	3.437	3.302	3.175	3.055	2.942	2.835	2.734	2.638	2.547	2.461	2.378
21	3.452	3.313	3.183	3.060	2.945	2.835	2.732	2.635	2.543	2.455	2.371	2.292
22	3.328	3.194	3.068	2.950	2.838	2.733	2.633	2.539	2.450	2.366	2.285	2.209
23	3.208	3.079	2.957	2.843	2.735	2.634	2.538	2.447	2.362	2.280	2.202	2.129
24	3.093	2.968	2.851	2.740	2.637	2.539	2.446	2.359	2.276	2.197	2.123	2.051
25	2.981	2.861	2.748	2.642	2.541	2.447	2.358	2.274	2.194	2.118	2.046	1.977
26	2.874	2.758	2.649	2.546	2.450	2.359	2.273	2.191	2.114	2.041	1.972	1.906
27	2.771	2.659	2.554	2.455	2.362	2.274	2.191	2.112	2.038	1.967	1.900	1.837
28	—	2.564	2.462	2.366	2.277	2.192	2.112	2.036	1.964	1.896	1.832	1.770
29	—	—	2.374	2.281	2.195	2.113	2.036	1.963	1.894	1.828	1.766	1.706
30+	—	—	—	2.199	2.116	2.037	1.962	1.892	1.825	1.762	1.702	1.645

表 C.8 女性胃癌 ERR_{16y} 值 (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	2.769	2.679	2.592	2.510	2.430	2.354	2.281	2.211	2.143	2.078	2.015	1.955
16	2.668	2.581	2.498	2.418	2.342	2.268	2.198	2.130	2.065	2.002	1.942	1.883
17	2.570	2.487	2.407	2.330	2.256	2.186	2.118	2.053	1.990	1.929	1.871	1.815
18	2.477	2.396	2.319	2.245	2.174	2.106	2.041	1.978	1.917	1.859	1.803	1.749
19	2.387	2.309	2.234	2.163	2.095	2.029	1.966	1.906	1.847	1.791	1.737	1.685
20	2.300	2.225	2.153	2.084	2.019	1.955	1.895	1.836	1.780	1.726	1.674	1.624
21	2.216	2.144	2.075	2.009	1.945	1.884	1.826	1.770	1.715	1.663	1.613	1.565
22	2.136	2.066	1.999	1.936	1.875	1.816	1.759	1.705	1.653	1.603	1.555	1.508
23	2.058	1.991	1.927	1.865	1.806	1.750	1.696	1.643	1.593	1.545	1.498	1.453
24	1.984	1.919	1.857	1.798	1.741	1.686	1.634	1.584	1.535	1.489	1.444	1.401
25	1.912	1.849	1.790	1.733	1.678	1.625	1.575	1.526	1.480	1.435	1.391	1.350
26	1.843	1.782	1.725	1.670	1.617	1.566	1.518	1.471	1.426	1.383	1.341	1.301
27	1.776	1.718	1.662	1.609	1.558	1.510	1.463	1.418	1.374	1.333	1.293	1.254
28	1.712	1.656	1.602	1.551	1.502	1.455	1.410	1.366	1.325	1.285	1.246	1.209
29	1.650	1.596	1.544	1.495	1.448	1.402	1.359	1.317	1.277	1.238	1.201	1.165
30+	1.590	1.538	1.489	1.441	1.395	1.352	1.310	1.269	1.231	1.193	1.157	1.123
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	1.896	1.840	1.786	1.733	1.683	1.634	1.587	1.542	1.499	1.457	1.417	1.378
16	1.827	1.773	1.721	1.670	1.622	1.575	1.529	1.486	1.444	1.404	1.365	1.328
17	1.761	1.708	1.658	1.609	1.563	1.517	1.474	1.432	1.392	1.353	1.316	1.280
18	1.697	1.646	1.598	1.551	1.506	1.462	1.420	1.380	1.341	1.304	1.268	1.234
19	1.635	1.586	1.540	1.494	1.451	1.409	1.369	1.330	1.293	1.257	1.222	1.189
20	1.575	1.529	1.484	1.440	1.398	1.358	1.319	1.282	1.246	1.211	1.178	1.146
21	1.518	1.473	1.430	1.388	1.348	1.309	1.271	1.235	1.201	1.167	1.135	1.105
22	1.463	1.420	1.378	1.338	1.299	1.261	1.225	1.191	1.157	1.125	1.094	1.065
23	1.410	1.368	1.328	1.289	1.252	1.216	1.181	1.147	1.115	1.084	1.055	1.026
24	1.359	1.319	1.280	1.242	1.206	1.172	1.138	1.106	1.075	1.045	1.017	0.989
25	1.310	1.271	1.233	1.197	1.163	1.129	1.097	1.066	1.036	1.008	0.980	0.954
26	1.262	1.225	1.189	1.154	1.121	1.088	1.057	1.028	0.999	0.971	0.945	0.919
27	1.217	1.181	1.146	1.112	1.080	1.049	1.019	0.990	0.963	0.936	0.911	0.886
28	1.173	1.138	1.105	1.072	1.041	1.011	0.983	0.955	0.928	0.902	0.878	0.854
29	1.130	1.097	1.065	1.034	1.004	0.975	0.947	0.920	0.895	0.870	0.846	0.824
30+	1.089	1.057	1.026	0.996	0.968	0.940	0.913	0.887	0.863	0.839	0.816	0.794

表 C.8 女性胃癌 ERR_{16y} 值 (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	1.342	1.306	1.273	1.241	1.210	1.181	1.154	1.129	1.104	1.082	1.061	1.042
16	1.293	1.259	1.227	1.196	1.166	1.139	1.112	1.088	1.065	1.043	1.023	1.004
17	1.246	1.213	1.182	1.152	1.124	1.098	1.072	1.048	1.026	1.005	0.986	0.968
18	1.201	1.169	1.139	1.111	1.084	1.058	1.033	1.011	0.989	0.969	0.950	0.933
19	1.157	1.127	1.098	1.071	1.044	1.020	0.996	0.974	0.953	0.934	0.916	0.899
20	1.116	1.086	1.059	1.032	1.007	0.983	0.960	0.939	0.919	0.900	0.883	0.867
21	1.075	1.047	1.020	0.995	0.970	0.947	0.926	0.905	0.886	0.868	0.851	0.836
22	1.036	1.009	0.983	0.959	0.935	0.913	0.892	0.873	0.854	0.837	0.820	0.806
23	0.999	0.973	0.948	0.924	0.902	0.880	0.860	0.841	0.823	0.806	0.791	0.777
24	0.963	0.938	0.914	0.891	0.869	0.849	0.829	0.811	0.794	0.777	0.763	0.749
25	0.928	0.904	0.881	0.859	0.838	0.818	0.799	0.782	0.765	0.750	0.735	0.722
26	0.895	0.872	0.849	0.828	0.808	0.789	0.771	0.754	0.738	0.723	0.709	0.696
27	0.863	0.840	0.819	0.798	0.779	0.761	0.743	0.727	0.711	0.697	0.683	0.671
28	0.832	0.810	0.789	0.770	0.751	0.733	0.716	0.701	0.686	0.672	0.659	0.647
29	0.802	0.781	0.761	0.742	0.724	0.707	0.691	0.676	0.661	0.648	0.635	0.624
30+	0.773	0.753	0.734	0.715	0.698	0.682	0.666	0.651	0.638	0.625	0.613	0.601
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	1.024	1.008	0.994	0.982	0.971	0.963	0.956	0.952	0.949	0.950		
16	0.987	0.972	0.958	0.946	0.936	0.928	0.921	0.917	0.915	0.915		
17	0.952	0.937	0.924	0.912	0.902	0.894	0.888	0.884	0.881	0.882		
18	0.917	0.903	0.890	0.879	0.870	0.862	0.856	0.852	0.849	0.849		
19	0.884	0.870	0.858	0.847	0.838	0.830	0.825	0.821	0.819	0.819		
20	0.852	0.839	0.827	0.817	0.808	0.800	0.795	0.791	0.789	0.789		
21	0.821	0.809	0.797	0.787	0.779	0.772	0.766	0.762	0.760	0.760		
22	0.792	0.780	0.769	0.759	0.751	0.744	0.738	0.735	0.733	0.732		
23	0.763	0.751	0.741	0.731	0.723	0.717	0.712	0.708	0.706	0.706		
24	0.736	0.724	0.714	0.705	0.697	0.691	0.686	0.682	0.680	0.680		
25	0.710	0.698	0.688	0.680	0.672	0.666	0.661	0.658	0.656	0.656		
26	0.684	0.673	0.664	0.655	0.648	0.642	0.637	0.634	0.632	0.632		
27	0.660	0.649	0.640	0.632	0.625	0.619	0.614	0.611	0.609	0.609		
28	0.636	0.626	0.617	0.609	0.602	0.597	0.592	0.589	0.587	0.587		
29	0.613	0.603	0.595	0.587	0.581	0.575	0.571	0.568	0.566	0.566		
30+	0.591	0.582	0.574	0.566	0.560	0.555	0.550	0.547	0.546	0.545		

表 C.9 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	4.761	4.519	4.300	4.100	3.914	3.740	3.574	3.417	3.267	3.123	2.986	2.854
16	—	4.369	4.157	3.962	3.782	3.613	3.453	3.300	3.155	3.016	2.883	2.756
17	—	—	4.018	3.829	3.654	3.490	3.335	3.187	3.047	2.912	2.784	2.660
18	—	—	—	3.701	3.531	3.372	3.222	3.079	2.942	2.812	2.688	2.569
19	—	—	—	—	3.412	3.258	3.112	2.974	2.842	2.716	2.595	2.480
20	—	—	—	—	—	3.148	3.006	2.872	2.745	2.623	2.506	2.395
21	—	—	—	—	—	—	2.904	2.774	2.651	2.533	2.420	2.313
22	—	—	—	—	—	—	—	2.680	2.560	2.446	2.337	2.233
23	—	—	—	—	—	—	—	—	2.473	2.363	2.257	2.157
24	—	—	—	—	—	—	—	—	—	2.282	2.180	2.083
25	—	—	—	—	—	—	—	—	—	—	2.106	2.012
26	—	—	—	—	—	—	—	—	—	—	—	1.943
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	2.728	2.608	2.493	2.384	2.279	2.180	2.087	1.997	1.913	1.833	1.758	1.687
16	2.634	2.518	2.407	2.301	2.201	2.105	2.014	1.928	1.847	1.770	1.697	1.628
17	2.543	2.431	2.323	2.221	2.124	2.032	1.945	1.862	1.783	1.709	1.639	1.572
18	2.455	2.347	2.243	2.145	2.051	1.962	1.877	1.797	1.721	1.650	1.582	1.518
19	2.371	2.266	2.166	2.071	1.980	1.894	1.813	1.735	1.662	1.593	1.527	1.466
20	2.289	2.188	2.091	1.999	1.912	1.829	1.750	1.675	1.605	1.538	1.475	1.415
21	2.210	2.112	2.019	1.930	1.846	1.766	1.690	1.618	1.549	1.485	1.424	1.367
22	2.134	2.040	1.949	1.864	1.782	1.705	1.631	1.562	1.496	1.434	1.375	1.320
23	2.061	1.969	1.882	1.800	1.721	1.646	1.575	1.508	1.445	1.385	1.328	1.274
24	1.990	1.902	1.818	1.738	1.662	1.590	1.521	1.456	1.395	1.337	1.282	1.231
25	1.922	1.837	1.755	1.678	1.605	1.535	1.469	1.406	1.347	1.291	1.238	1.188
26	1.856	1.774	1.695	1.620	1.549	1.482	1.418	1.358	1.301	1.247	1.196	1.148
27	1.793	1.713	1.637	1.565	1.496	1.431	1.370	1.311	1.256	1.204	1.155	1.108
28	—	1.654	1.581	1.511	1.445	1.382	1.323	1.267	1.213	1.163	1.115	1.070
29	—	—	1.527	1.459	1.396	1.335	1.278	1.223	1.172	1.123	1.077	1.034
30+	—	—	—	1.409	1.348	1.289	1.234	1.181	1.132	1.085	1.040	0.999
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	1.619	1.556	1.496	1.440	1.386	1.336	1.289	1.245	1.203	1.163	1.126	1.091

表 C.9 女性结肠癌 ERR_{16y} 值 (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
16	1.563	1.502	1.444	1.390	1.339	1.290	1.245	1.202	1.161	1.123	1.087	1.053
17	1.510	1.450	1.395	1.342	1.293	1.246	1.202	1.161	1.122	1.085	1.050	1.017
18	1.458	1.401	1.347	1.296	1.248	1.203	1.161	1.121	1.083	1.048	1.014	0.983
19	1.407	1.352	1.300	1.252	1.205	1.162	1.121	1.082	1.046	1.012	0.979	0.949
20	1.359	1.306	1.256	1.209	1.164	1.122	1.083	1.045	1.010	0.977	0.946	0.917
21	1.312	1.261	1.213	1.167	1.124	1.084	1.046	1.010	0.976	0.944	0.914	0.885
22	1.267	1.218	1.171	1.127	1.086	1.047	1.010	0.975	0.942	0.912	0.883	0.855
23	1.224	1.176	1.131	1.089	1.049	1.011	0.975	0.942	0.910	0.881	0.853	0.826
24	1.182	1.136	1.092	1.051	1.013	0.976	0.942	0.910	0.879	0.851	0.823	0.798
25	1.141	1.097	1.055	1.015	0.978	0.943	0.910	0.879	0.849	0.822	0.795	0.771
26	1.102	1.059	1.019	0.981	0.945	0.911	0.879	0.849	0.820	0.794	0.768	0.745
27	1.065	1.023	0.984	0.947	0.913	0.880	0.849	0.820	0.793	0.767	0.742	0.719
28	1.028	0.988	0.950	0.915	0.881	0.850	0.820	0.792	0.766	0.741	0.717	0.695
29	0.993	0.954	0.918	0.884	0.851	0.821	0.792	0.765	0.740	0.716	0.693	0.671
30+	0.959	0.922	0.887	0.854	0.823	0.793	0.765	0.739	0.715	0.691	0.669	0.649
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	1.058	1.026	0.997	0.969	0.943	0.918	0.894	0.872	0.851	0.831	0.812	0.794
16	1.021	0.991	0.963	0.936	0.910	0.886	0.864	0.842	0.822	0.803	0.784	0.767
17	0.986	0.957	0.930	0.904	0.879	0.856	0.834	0.814	0.794	0.775	0.758	0.741
18	0.953	0.925	0.898	0.873	0.849	0.827	0.806	0.786	0.767	0.749	0.732	0.716
19	0.920	0.893	0.867	0.843	0.820	0.799	0.778	0.759	0.741	0.723	0.707	0.691
20	0.889	0.863	0.838	0.815	0.792	0.772	0.752	0.733	0.716	0.699	0.683	0.668
21	0.859	0.833	0.809	0.787	0.766	0.745	0.726	0.708	0.691	0.675	0.660	0.645
22	0.829	0.805	0.782	0.760	0.740	0.720	0.702	0.684	0.668	0.652	0.637	0.623
23	0.801	0.778	0.755	0.734	0.714	0.696	0.678	0.661	0.645	0.630	0.616	0.602
24	0.774	0.751	0.730	0.709	0.690	0.672	0.655	0.639	0.623	0.609	0.595	0.582
25	0.748	0.726	0.705	0.685	0.667	0.649	0.633	0.617	0.602	0.588	0.575	0.562
26	0.722	0.701	0.681	0.662	0.644	0.627	0.611	0.596	0.582	0.568	0.555	0.543
27	0.698	0.677	0.658	0.640	0.622	0.606	0.591	0.576	0.562	0.549	0.536	0.525
28	0.674	0.654	0.636	0.618	0.601	0.586	0.571	0.556	0.543	0.530	0.518	0.507
29	0.651	0.632	0.614	0.597	0.581	0.566	0.551	0.538	0.525	0.512	0.501	0.490
30+	0.629	0.611	0.593	0.577	0.561	0.547	0.533	0.520	0.507	0.495	0.484	0.473

表 C.9 女性结肠癌 ERR_{16y} 值 (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	0.777	0.761	0.746	0.731	0.717	0.703	0.690	0.678	0.666	0.655	0.643	0.633
16	0.751	0.735	0.720	0.706	0.692	0.679	0.667	0.655	0.643	0.632	0.621	0.611
17	0.725	0.710	0.696	0.682	0.669	0.656	0.644	0.632	0.621	0.611	0.600	0.590
18	0.700	0.686	0.672	0.659	0.646	0.634	0.622	0.611	0.600	0.590	0.580	0.570
19	0.677	0.662	0.649	0.636	0.624	0.612	0.601	0.590	0.580	0.570	0.560	0.550
20	0.653	0.640	0.627	0.614	0.603	0.591	0.580	0.570	0.560	0.550	0.541	0.531
21	0.631	0.618	0.606	0.594	0.582	0.571	0.561	0.550	0.541	0.531	0.522	0.513
22	0.610	0.597	0.585	0.573	0.562	0.552	0.542	0.532	0.522	0.513	0.504	0.496
23	0.589	0.577	0.565	0.554	0.543	0.533	0.523	0.514	0.505	0.496	0.487	0.479
24	0.569	0.557	0.546	0.535	0.525	0.515	0.505	0.496	0.487	0.479	0.471	0.463
25	0.550	0.538	0.527	0.517	0.507	0.497	0.488	0.479	0.471	0.463	0.455	0.447
26	0.531	0.520	0.510	0.499	0.490	0.480	0.472	0.463	0.455	0.447	0.439	0.432
27	0.513	0.503	0.492	0.483	0.473	0.464	0.456	0.447	0.439	0.432	0.424	0.417
28	0.496	0.486	0.476	0.466	0.457	0.449	0.440	0.432	0.425	0.417	0.410	0.403
29	0.479	0.469	0.460	0.450	0.442	0.433	0.425	0.418	0.410	0.403	0.396	0.389
30+	0.463	0.453	0.444	0.435	0.427	0.419	0.411	0.403	0.396	0.389	0.383	0.376
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.622	0.612	0.601	0.591	0.581	0.572	0.562	0.552	0.542	0.532		
16	0.601	0.591	0.581	0.571	0.561	0.552	0.543	0.533	0.524	0.514		
17	0.580	0.570	0.561	0.552	0.542	0.533	0.524	0.515	0.506	0.496		
18	0.560	0.551	0.542	0.533	0.524	0.515	0.506	0.497	0.488	0.479		
19	0.541	0.532	0.523	0.514	0.506	0.497	0.489	0.480	0.472	0.463		
20	0.523	0.514	0.505	0.497	0.488	0.480	0.472	0.464	0.455	0.447		
21	0.505	0.496	0.488	0.480	0.472	0.464	0.456	0.448	0.440	0.432		
22	0.488	0.479	0.471	0.463	0.456	0.448	0.440	0.433	0.425	0.417		
23	0.471	0.463	0.455	0.448	0.440	0.433	0.425	0.418	0.410	0.403		
24	0.455	0.447	0.440	0.432	0.425	0.418	0.411	0.404	0.396	0.389		
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
25	0.439	0.432	0.425	0.418	0.411	0.404	0.397	0.390	0.383	0.376		
26	0.424	0.417	0.410	0.403	0.397	0.390	0.383	0.377	0.370	0.363		
27	0.410	0.403	0.396	0.390	0.383	0.377	0.370	0.364	0.357	0.351		
28	0.396	0.389	0.383	0.377	0.370	0.364	0.358	0.351	0.345	0.339		
29	0.383	0.376	0.370	0.364	0.358	0.352	0.346	0.339	0.333	0.327		
30+	0.370	0.364	0.357	0.351	0.346	0.340	0.334	0.328	0.322	0.316		

表 C.10 女性肝癌 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	2.565	2.376	2.215	2.078	1.958	1.853	1.759	1.675	1.598	1.527	1.462	1.401
16	—	2.304	2.148	2.015	1.898	1.796	1.705	1.623	1.548	1.479	1.416	1.357
17	—	—	2.083	1.953	1.840	1.741	1.652	1.572	1.499	1.433	1.371	1.314
18	—	—	—	1.894	1.784	1.687	1.601	1.523	1.453	1.388	1.328	1.272
19	—	—	—	—	1.729	1.635	1.551	1.476	1.407	1.344	1.286	1.232
20	—	—	—	—	—	1.585	1.503	1.430	1.363	1.302	1.246	1.193
21	—	—	—	—	—	—	1.457	1.386	1.321	1.262	1.207	1.156
22	—	—	—	—	—	—	—	1.343	1.280	1.222	1.169	1.119
23	—	—	—	—	—	—	—	—	1.240	1.184	1.132	1.084
24	—	—	—	—	—	—	—	—	—	1.147	1.097	1.050
25	—	—	—	—	—	—	—	—	—	—	1.062	1.017
26	—	—	—	—	—	—	—	—	—	—	—	0.985
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	1.344	1.292	1.242	1.196	1.152	1.112	1.074	1.038	1.004	0.973	0.944	0.916
16	1.302	1.251	1.203	1.158	1.116	1.076	1.039	1.004	0.972	0.941	0.913	0.886
17	1.261	1.211	1.164	1.121	1.080	1.042	1.006	0.972	0.941	0.911	0.883	0.858
18	1.221	1.172	1.127	1.085	1.045	1.008	0.973	0.941	0.910	0.882	0.855	0.830
19	1.182	1.135	1.091	1.050	1.012	0.976	0.942	0.910	0.881	0.853	0.827	0.803
20	1.145	1.099	1.057	1.017	0.980	0.945	0.912	0.881	0.853	0.826	0.800	0.777
21	1.109	1.064	1.023	0.985	0.948	0.914	0.883	0.853	0.825	0.799	0.775	0.752
22	1.074	1.031	0.991	0.953	0.918	0.885	0.854	0.826	0.799	0.773	0.750	0.727
23	1.040	0.998	0.959	0.923	0.889	0.857	0.827	0.799	0.773	0.748	0.725	0.704
24	1.007	0.967	0.929	0.894	0.861	0.830	0.801	0.774	0.748	0.724	0.702	0.681
25	0.975	0.936	0.899	0.865	0.833	0.803	0.775	0.749	0.724	0.701	0.680	0.659
26	0.944	0.906	0.871	0.838	0.807	0.778	0.750	0.725	0.701	0.679	0.658	0.638
27	0.915	0.878	0.843	0.811	0.781	0.753	0.726	0.702	0.678	0.657	0.637	0.618
28	—	0.850	0.817	0.785	0.756	0.729	0.703	0.679	0.657	0.636	0.616	0.598
29	—	—	0.791	0.761	0.732	0.706	0.681	0.658	0.636	0.615	0.596	0.578
30+	—	—	—	0.736	0.709	0.683	0.659	0.637	0.615	0.596	0.577	0.560
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	0.890	0.866	0.844	0.823	0.803	0.784	0.767	0.750	0.734	0.720	0.705	0.692

表 C.10 女性肝癌 ERR_{10y} 值 (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
16	0.861	0.838	0.816	0.796	0.776	0.758	0.741	0.725	0.710	0.696	0.682	0.669
17	0.833	0.811	0.790	0.770	0.751	0.733	0.717	0.701	0.687	0.673	0.659	0.647
18	0.806	0.784	0.764	0.745	0.726	0.709	0.693	0.678	0.664	0.651	0.638	0.625
19	0.780	0.759	0.739	0.720	0.703	0.686	0.671	0.656	0.642	0.629	0.617	0.605
20	0.755	0.734	0.715	0.697	0.680	0.664	0.649	0.634	0.621	0.608	0.596	0.585
21	0.730	0.710	0.692	0.674	0.658	0.642	0.627	0.614	0.601	0.588	0.576	0.565
22	0.707	0.687	0.669	0.652	0.636	0.621	0.607	0.594	0.581	0.569	0.557	0.547
23	0.684	0.665	0.647	0.631	0.615	0.601	0.587	0.574	0.562	0.550	0.539	0.528
24	0.662	0.644	0.626	0.610	0.595	0.581	0.568	0.555	0.543	0.532	0.521	0.511
25	0.640	0.623	0.606	0.591	0.576	0.562	0.549	0.537	0.526	0.515	0.504	0.494
26	0.620	0.603	0.586	0.571	0.557	0.544	0.531	0.520	0.508	0.498	0.488	0.478
27	0.600	0.583	0.567	0.553	0.539	0.526	0.514	0.503	0.492	0.481	0.472	0.462
28	0.580	0.564	0.549	0.535	0.522	0.509	0.497	0.486	0.476	0.466	0.456	0.447
29	0.562	0.546	0.531	0.518	0.505	0.493	0.481	0.470	0.460	0.450	0.441	0.432
30+	0.544	0.528	0.514	0.501	0.488	0.477	0.465	0.455	0.445	0.436	0.427	0.418
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	0.679	0.666	0.654	0.642	0.631	0.619	0.608	0.597	0.586	0.575	0.564	0.553
16	0.656	0.644	0.632	0.621	0.610	0.599	0.588	0.577	0.566	0.556	0.545	0.535
17	0.635	0.623	0.611	0.600	0.589	0.579	0.568	0.558	0.547	0.537	0.527	0.517
18	0.613	0.602	0.591	0.580	0.570	0.559	0.549	0.539	0.529	0.519	0.509	0.499
19	0.593	0.582	0.571	0.561	0.551	0.541	0.531	0.521	0.511	0.502	0.492	0.483
20	0.573	0.563	0.552	0.542	0.532	0.522	0.513	0.503	0.494	0.485	0.475	0.466
21	0.554	0.544	0.534	0.524	0.514	0.505	0.496	0.487	0.477	0.468	0.460	0.451
22	0.536	0.526	0.516	0.507	0.497	0.488	0.479	0.470	0.461	0.453	0.444	0.436
23	0.518	0.509	0.499	0.490	0.481	0.472	0.463	0.455	0.446	0.438	0.429	0.421
24	0.501	0.492	0.482	0.474	0.465	0.456	0.448	0.439	0.431	0.423	0.415	0.407
25	0.485	0.475	0.466	0.458	0.449	0.441	0.433	0.425	0.417	0.409	0.401	0.393
26	0.469	0.460	0.451	0.443	0.434	0.426	0.418	0.411	0.403	0.395	0.388	0.380
27	0.453	0.444	0.436	0.428	0.420	0.412	0.404	0.397	0.389	0.382	0.375	0.367
28	0.438	0.430	0.422	0.414	0.406	0.398	0.391	0.384	0.376	0.369	0.362	0.355
29	0.424	0.416	0.408	0.400	0.393	0.385	0.378	0.371	0.364	0.357	0.350	0.343
30+	0.410	0.402	0.394	0.387	0.380	0.372	0.365	0.359	0.352	0.345	0.338	0.332

表 C.10 女性肝癌 ERR_{1Gy} 值 (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	0.543	0.532	0.522	0.512	0.502	0.492	0.483	0.475	0.467	0.459	0.453	0.448
16	0.524	0.514	0.504	0.494	0.485	0.476	0.467	0.459	0.451	0.444	0.438	0.432
17	0.507	0.497	0.487	0.478	0.468	0.460	0.451	0.443	0.436	0.429	0.423	0.418
18	0.490	0.480	0.471	0.462	0.453	0.444	0.436	0.428	0.421	0.414	0.409	0.404
19	0.473	0.464	0.455	0.446	0.437	0.429	0.421	0.414	0.407	0.400	0.395	0.390
20	0.457	0.448	0.440	0.431	0.423	0.415	0.407	0.400	0.393	0.387	0.381	0.377
21	0.442	0.433	0.425	0.416	0.408	0.401	0.393	0.386	0.380	0.374	0.368	0.364
22	0.427	0.419	0.411	0.402	0.395	0.387	0.380	0.373	0.367	0.361	0.356	0.352
23	0.413	0.405	0.397	0.389	0.381	0.374	0.367	0.361	0.355	0.349	0.344	0.340
24	0.399	0.391	0.383	0.376	0.369	0.362	0.355	0.349	0.343	0.337	0.332	0.328
25	0.386	0.378	0.371	0.363	0.356	0.349	0.343	0.337	0.331	0.326	0.321	0.317
26	0.373	0.365	0.358	0.351	0.344	0.338	0.331	0.326	0.320	0.315	0.310	0.307
27	0.360	0.353	0.346	0.339	0.333	0.326	0.320	0.315	0.309	0.304	0.300	0.296
28	0.348	0.341	0.335	0.328	0.322	0.315	0.310	0.304	0.299	0.294	0.290	0.286
29	0.336	0.330	0.323	0.317	0.311	0.305	0.299	0.294	0.289	0.284	0.280	0.277
30+	0.325	0.319	0.313	0.306	0.300	0.295	0.289	0.284	0.279	0.275	0.271	0.267
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.443	0.441	0.439	0.440	0.443	0.449	0.459	0.473	0.494	0.523		
16	0.428	0.426	0.424	0.425	0.428	0.434	0.443	0.457	0.477	0.504		
17	0.414	0.411	0.410	0.410	0.413	0.419	0.428	0.441	0.460	0.486		
18	0.400	0.397	0.396	0.396	0.399	0.404	0.413	0.425	0.443	0.469		
19	0.386	0.384	0.382	0.383	0.385	0.390	0.398	0.410	0.428	0.452		
20	0.373	0.371	0.369	0.370	0.372	0.377	0.385	0.396	0.413	0.436		
21	0.360	0.358	0.357	0.357	0.359	0.364	0.371	0.382	0.398	0.421		
22	0.348	0.346	0.345	0.345	0.347	0.351	0.358	0.369	0.384	0.406		
23	0.336	0.334	0.333	0.333	0.335	0.339	0.346	0.356	0.371	0.391		
24	0.325	0.323	0.322	0.322	0.324	0.327	0.334	0.344	0.358	0.377		
25	0.314	0.312	0.311	0.311	0.313	0.316	0.322	0.332	0.345	0.364		
26	0.304	0.301	0.300	0.300	0.302	0.305	0.311	0.320	0.333	0.351		
27	0.293	0.291	0.290	0.290	0.292	0.295	0.301	0.309	0.321	0.339		
28	0.283	0.281	0.280	0.280	0.282	0.285	0.290	0.298	0.310	0.327		
29	0.274	0.272	0.271	0.271	0.272	0.275	0.280	0.288	0.299	0.315		
30+	0.265	0.263	0.262	0.262	0.263	0.266	0.271	0.278	0.289	0.304		

表 C.11 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	4.856	4.501	4.196	3.930	3.694	3.482	3.290	3.115	2.954	2.805	2.667	2.540
16	—	4.365	4.068	3.810	3.581	3.375	3.189	3.018	2.862	2.717	2.584	2.460
17	—	—	3.944	3.693	3.471	3.271	3.090	2.925	2.773	2.633	2.503	2.383
18	—	—	—	3.580	3.364	3.170	2.995	2.834	2.687	2.551	2.425	2.309
19	—	—	—	—	3.261	3.073	2.902	2.746	2.603	2.471	2.349	2.237
20	—	—	—	—	—	2.978	2.813	2.661	2.522	2.394	2.276	2.167
21	—	—	—	—	—	—	2.726	2.579	2.444	2.320	2.205	2.099
22	—	—	—	—	—	—	—	2.499	2.368	2.248	2.137	2.034
23	—	—	—	—	—	—	—	—	2.295	2.178	2.070	1.970
24	—	—	—	—	—	—	—	—	—	2.110	2.006	1.909
25	—	—	—	—	—	—	—	—	—	—	1.943	1.849
26	—	—	—	—	—	—	—	—	—	—	—	1.792
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	2.422	2.313	2.212	2.118	2.032	1.953	1.880	1.813	1.751	1.694	1.643	1.595
16	2.346	2.240	2.142	2.052	1.968	1.891	1.821	1.755	1.696	1.641	1.590	1.544
17	2.272	2.170	2.075	1.987	1.906	1.832	1.763	1.700	1.642	1.589	1.540	1.495
18	2.201	2.102	2.010	1.925	1.846	1.774	1.708	1.646	1.590	1.538	1.491	1.448
19	2.132	2.036	1.947	1.864	1.788	1.718	1.654	1.594	1.540	1.490	1.444	1.402
20	2.066	1.972	1.886	1.806	1.732	1.664	1.602	1.544	1.491	1.442	1.398	1.357
21	2.001	1.910	1.827	1.749	1.678	1.612	1.551	1.495	1.444	1.397	1.354	1.314
22	1.939	1.851	1.769	1.694	1.625	1.561	1.502	1.448	1.398	1.353	1.311	1.272
23	1.878	1.793	1.714	1.641	1.574	1.512	1.455	1.403	1.354	1.310	1.269	1.232
24	1.819	1.737	1.660	1.590	1.525	1.465	1.409	1.358	1.311	1.268	1.229	1.193
25	1.763	1.683	1.608	1.540	1.477	1.419	1.365	1.316	1.270	1.228	1.190	1.155
26	1.708	1.630	1.558	1.492	1.431	1.374	1.322	1.274	1.230	1.190	1.153	1.118
27	1.655	1.579	1.510	1.445	1.386	1.331	1.281	1.234	1.191	1.152	1.116	1.083
28	—	1.530	1.462	1.400	1.342	1.289	1.240	1.195	1.154	1.116	1.081	1.049
29	—	—	1.417	1.356	1.300	1.249	1.202	1.158	1.118	1.081	1.047	1.016
30+	—	—	—	1.314	1.260	1.210	1.164	1.122	1.083	1.047	1.014	0.984
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	1.552	1.513	1.478	1.445	1.417	1.391	1.368	1.348	1.330	1.314	1.300	1.288

表 C.11 女性外照射致肺癌 ERR_{16y} 值 (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
16	1.503	1.465	1.430	1.399	1.371	1.346	1.323	1.304	1.286	1.271	1.257	1.245
17	1.455	1.418	1.384	1.354	1.327	1.302	1.280	1.261	1.244	1.229	1.215	1.204
18	1.408	1.372	1.340	1.310	1.284	1.260	1.239	1.220	1.203	1.188	1.175	1.164
19	1.363	1.329	1.297	1.268	1.243	1.219	1.199	1.180	1.164	1.149	1.137	1.125
20	1.320	1.286	1.255	1.228	1.202	1.180	1.160	1.142	1.126	1.112	1.099	1.088
21	1.278	1.245	1.215	1.188	1.164	1.142	1.122	1.105	1.089	1.075	1.063	1.052
22	1.237	1.205	1.176	1.150	1.126	1.105	1.086	1.069	1.054	1.040	1.028	1.018
23	1.198	1.167	1.139	1.113	1.090	1.069	1.051	1.034	1.019	1.006	0.994	0.984
24	1.160	1.130	1.102	1.078	1.055	1.035	1.017	1.001	0.986	0.973	0.962	0.952
25	1.123	1.094	1.067	1.043	1.021	1.002	0.984	0.968	0.954	0.941	0.930	0.920
26	1.087	1.059	1.033	1.010	0.988	0.969	0.952	0.937	0.923	0.911	0.900	0.890
27	1.053	1.025	1.000	0.977	0.957	0.938	0.921	0.906	0.893	0.881	0.870	0.861
28	1.019	0.993	0.968	0.946	0.926	0.908	0.892	0.877	0.864	0.852	0.842	0.832
29	0.987	0.961	0.938	0.916	0.896	0.879	0.863	0.849	0.836	0.824	0.814	0.805
30+	0.956	0.931	0.908	0.887	0.868	0.851	0.835	0.821	0.809	0.798	0.788	0.779
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	1.277	1.267	1.259	1.251	1.243	1.236	1.228	1.220	1.212	1.202	1.193	1.182
16	1.234	1.225	1.216	1.209	1.201	1.194	1.186	1.178	1.170	1.161	1.152	1.141
17	1.193	1.184	1.176	1.168	1.160	1.153	1.146	1.138	1.130	1.121	1.112	1.102
18	1.154	1.145	1.136	1.129	1.121	1.114	1.107	1.099	1.091	1.083	1.074	1.064
19	1.115	1.106	1.098	1.091	1.083	1.076	1.069	1.062	1.054	1.046	1.037	1.027
20	1.078	1.069	1.061	1.054	1.047	1.040	1.033	1.026	1.018	1.010	1.001	0.992
21	1.043	1.034	1.026	1.019	1.012	1.005	0.998	0.991	0.983	0.975	0.967	0.958
22	1.008	0.999	0.992	0.984	0.978	0.971	0.964	0.957	0.950	0.942	0.934	0.925
23	0.975	0.966	0.959	0.952	0.945	0.938	0.931	0.925	0.917	0.910	0.902	0.893
24	0.942	0.934	0.927	0.920	0.913	0.906	0.900	0.893	0.886	0.879	0.871	0.863
25	0.911	0.903	0.896	0.889	0.882	0.876	0.870	0.863	0.856	0.849	0.841	0.833
26	0.881	0.873	0.866	0.859	0.853	0.846	0.840	0.834	0.827	0.820	0.812	0.804
27	0.852	0.844	0.837	0.831	0.824	0.818	0.812	0.806	0.799	0.792	0.785	0.777
28	0.824	0.816	0.809	0.803	0.797	0.791	0.784	0.778	0.772	0.765	0.758	0.750
29	0.797	0.789	0.782	0.776	0.770	0.764	0.758	0.752	0.746	0.739	0.732	0.725
30+	0.771	0.763	0.756	0.750	0.744	0.738	0.733	0.727	0.720	0.714	0.707	0.700

表 C.11 女性外照射致肺癌 ERR_{16y} 值 (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	1.171	1.158	1.146	1.132	1.119	1.106	1.094	1.082	1.072	1.065	1.060	1.059
16	1.130	1.118	1.106	1.093	1.080	1.068	1.055	1.044	1.035	1.027	1.022	1.021
17	1.091	1.080	1.067	1.055	1.043	1.030	1.019	1.008	0.999	0.991	0.987	0.985
18	1.053	1.042	1.031	1.019	1.006	0.995	0.983	0.973	0.964	0.956	0.952	0.951
19	1.017	1.006	0.995	0.983	0.971	0.960	0.949	0.939	0.930	0.923	0.919	0.917
20	0.982	0.971	0.960	0.949	0.938	0.927	0.916	0.906	0.898	0.891	0.886	0.885
21	0.948	0.938	0.927	0.916	0.905	0.894	0.884	0.875	0.866	0.860	0.855	0.854
22	0.915	0.906	0.895	0.885	0.874	0.863	0.853	0.844	0.836	0.830	0.825	0.824
23	0.884	0.874	0.864	0.854	0.844	0.833	0.824	0.815	0.807	0.801	0.797	0.795
24	0.854	0.844	0.834	0.824	0.814	0.805	0.795	0.786	0.779	0.773	0.769	0.767
25	0.824	0.815	0.806	0.796	0.786	0.777	0.768	0.759	0.752	0.746	0.742	0.740
26	0.796	0.787	0.778	0.769	0.759	0.750	0.741	0.733	0.726	0.720	0.716	0.715
27	0.769	0.760	0.751	0.742	0.733	0.724	0.715	0.707	0.700	0.695	0.691	0.690
28	0.742	0.734	0.725	0.717	0.708	0.699	0.691	0.683	0.676	0.671	0.667	0.666
29	0.717	0.709	0.701	0.692	0.683	0.675	0.667	0.659	0.653	0.647	0.644	0.642
30+	0.693	0.685	0.676	0.668	0.660	0.652	0.644	0.637	0.630	0.625	0.621	0.620
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	1.062	1.072	1.089	1.117	1.158	1.216	1.298	1.413	1.576	1.809		
16	1.025	1.034	1.051	1.077	1.116	1.172	1.250	1.361	1.517	1.741		
17	0.988	0.997	1.013	1.038	1.076	1.129	1.205	1.311	1.461	1.675		
18	0.954	0.962	0.977	1.001	1.037	1.088	1.161	1.262	1.406	1.612		
19	0.920	0.928	0.942	0.965	1.000	1.049	1.118	1.216	1.354	1.551		
20	0.888	0.895	0.909	0.931	0.964	1.011	1.077	1.171	1.303	1.493		
21	0.856	0.863	0.877	0.898	0.929	0.974	1.038	1.128	1.255	1.437		
22	0.826	0.833	0.846	0.866	0.896	0.939	1.000	1.086	1.208	1.383		
23	0.797	0.804	0.816	0.835	0.864	0.905	0.964	1.046	1.163	1.331		
24	0.769	0.775	0.787	0.805	0.833	0.872	0.929	1.008	1.120	1.281		
25	0.742	0.748	0.759	0.776	0.803	0.841	0.895	0.971	1.078	1.232		
26	0.716	0.722	0.732	0.749	0.774	0.811	0.862	0.935	1.038	1.186		
27	0.691	0.696	0.706	0.722	0.746	0.781	0.831	0.901	1.000	1.142		
28	0.667	0.672	0.681	0.697	0.720	0.753	0.801	0.868	0.963	1.099		
29	0.644	0.648	0.657	0.672	0.694	0.726	0.772	0.836	0.927	1.058		
30+	0.621	0.625	0.634	0.648	0.669	0.700	0.744	0.805	0.893	1.018		

表 C.12 女性膀胱癌 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	12.672	11.598	10.677	9.880	9.186	8.577	8.039	7.560	7.133	6.750	6.405	6.093
16	—	11.254	10.360	9.587	8.913	8.322	7.799	7.335	6.920	6.548	6.213	5.910
17	—	—	10.053	9.303	8.649	8.074	7.567	7.116	6.714	6.353	6.027	5.733
18	—	—	—	9.027	8.392	7.834	7.342	6.904	6.513	6.163	5.847	5.561
19	—	—	—	—	8.143	7.601	7.123	6.699	6.319	5.979	5.672	5.394
20	—	—	—	—	—	7.376	6.911	6.499	6.131	5.800	5.502	5.233
21	—	—	—	—	—	—	6.706	6.305	5.948	5.627	5.337	5.076
22	—	—	—	—	—	—	—	6.117	5.770	5.459	5.178	4.924
23	—	—	—	—	—	—	—	—	5.598	5.296	5.023	4.776
24	—	—	—	—	—	—	—	—	—	5.137	4.873	4.633
25	—	—	—	—	—	—	—	—	—	—	4.727	4.494
26	—	—	—	—	—	—	—	—	—	—	—	4.360
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	5.810	5.553	5.319	5.106	4.912	4.734	4.572	4.425	4.291	4.169	4.059	3.959
16	5.636	5.386	5.159	4.952	4.763	4.590	4.433	4.290	4.159	4.041	3.933	3.837
17	5.466	5.224	5.003	4.802	4.618	4.451	4.298	4.159	4.032	3.917	3.812	3.718
18	5.302	5.067	4.852	4.657	4.479	4.316	4.167	4.032	3.908	3.796	3.695	3.603
19	5.143	4.914	4.706	4.516	4.343	4.185	4.040	3.909	3.789	3.680	3.581	3.492
20	4.989	4.766	4.564	4.380	4.211	4.058	3.917	3.789	3.673	3.567	3.471	3.384
21	4.839	4.623	4.427	4.248	4.084	3.935	3.798	3.674	3.560	3.457	3.364	3.279
22	4.693	4.484	4.293	4.119	3.960	3.815	3.683	3.562	3.452	3.351	3.260	3.178
23	4.553	4.349	4.164	3.995	3.841	3.700	3.571	3.453	3.346	3.248	3.160	3.080
24	4.416	4.219	4.039	3.874	3.724	3.587	3.462	3.348	3.244	3.149	3.063	2.985
25	4.284	4.092	3.917	3.758	3.612	3.479	3.357	3.246	3.145	3.052	2.969	2.893
26	4.155	3.969	3.799	3.644	3.503	3.373	3.255	3.147	3.049	2.959	2.877	2.803
27	4.030	3.850	3.685	3.534	3.397	3.271	3.156	3.051	2.956	2.868	2.789	2.717
28	—	3.734	3.574	3.428	3.294	3.172	3.061	2.959	2.865	2.781	2.703	2.633
29	—	—	3.466	3.324	3.195	3.076	2.968	2.869	2.778	2.695	2.620	2.552
30+	—	—	—	3.224	3.098	2.983	2.878	2.781	2.693	2.613	2.540	2.474
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	3.870	3.791	3.721	3.659	3.604	3.557	3.517	3.482	3.452	3.426	3.404	3.383

表 C.12 女性膀胱癌 $ERR_{1\text{Gy}}$ 值 (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
16	3.750	3.673	3.604	3.543	3.490	3.444	3.404	3.370	3.340	3.315	3.292	3.272
17	3.634	3.558	3.491	3.432	3.380	3.334	3.295	3.262	3.232	3.207	3.185	3.165
18	3.521	3.447	3.382	3.324	3.273	3.228	3.190	3.157	3.128	3.103	3.081	3.061
19	3.411	3.340	3.276	3.219	3.169	3.126	3.088	3.055	3.027	3.002	2.981	2.961
20	3.306	3.236	3.173	3.118	3.069	3.027	2.990	2.957	2.930	2.905	2.884	2.864
21	3.203	3.135	3.074	3.020	2.972	2.931	2.894	2.863	2.835	2.811	2.790	2.770
22	3.104	3.037	2.978	2.925	2.879	2.838	2.802	2.771	2.744	2.720	2.699	2.680
23	3.008	2.943	2.885	2.833	2.788	2.748	2.713	2.682	2.656	2.632	2.611	2.592
24	2.914	2.851	2.795	2.744	2.700	2.661	2.626	2.596	2.570	2.547	2.526	2.508
25	2.824	2.762	2.707	2.658	2.615	2.577	2.543	2.513	2.488	2.465	2.444	2.426
26	2.737	2.677	2.623	2.575	2.532	2.495	2.462	2.433	2.408	2.385	2.365	2.347
27	2.652	2.594	2.541	2.494	2.453	2.416	2.384	2.355	2.330	2.308	2.288	2.270
28	2.570	2.513	2.462	2.416	2.376	2.340	2.308	2.280	2.256	2.234	2.214	2.196
29	2.491	2.435	2.385	2.341	2.301	2.266	2.235	2.208	2.183	2.162	2.143	2.125
30+	2.414	2.359	2.311	2.267	2.229	2.194	2.164	2.137	2.114	2.092	2.073	2.056
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	3.364	3.345	3.326	3.304	3.280	3.252	3.220	3.184	3.142	3.096	3.045	2.990
16	3.253	3.234	3.215	3.194	3.170	3.143	3.111	3.076	3.036	2.991	2.942	2.888
17	3.146	3.127	3.108	3.087	3.063	3.037	3.007	2.972	2.933	2.890	2.842	2.790
18	3.042	3.024	3.005	2.984	2.961	2.935	2.905	2.872	2.834	2.792	2.745	2.695
19	2.942	2.924	2.905	2.884	2.862	2.836	2.807	2.775	2.738	2.697	2.652	2.604
20	2.845	2.827	2.808	2.788	2.766	2.741	2.713	2.681	2.645	2.606	2.562	2.515
21	2.752	2.734	2.715	2.695	2.674	2.649	2.622	2.591	2.556	2.518	2.476	2.430
22	2.661	2.644	2.625	2.606	2.584	2.561	2.534	2.504	2.470	2.433	2.392	2.348
23	2.574	2.556	2.538	2.519	2.498	2.475	2.449	2.419	2.387	2.350	2.311	2.269
24	2.490	2.472	2.454	2.436	2.415	2.392	2.367	2.338	2.306	2.271	2.233	2.192
25	2.408	2.391	2.373	2.355	2.335	2.312	2.287	2.259	2.229	2.195	2.158	2.118
26	2.329	2.312	2.295	2.277	2.257	2.235	2.211	2.184	2.154	2.121	2.085	2.046
27	2.253	2.236	2.219	2.201	2.182	2.160	2.137	2.110	2.081	2.049	2.015	1.977
28	2.179	2.163	2.146	2.128	2.109	2.088	2.065	2.040	2.011	1.980	1.947	1.911
29	2.108	2.092	2.075	2.058	2.039	2.019	1.996	1.971	1.944	1.914	1.881	1.846
30+	2.039	2.023	2.007	1.990	1.972	1.952	1.930	1.905	1.879	1.850	1.818	1.784

表 C.12 女性膀胱癌 ERR_{16y} 值 (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	2.931	2.869	2.805	2.739	2.674	2.610	2.548	2.489	2.435	2.386	2.345	2.312
16	2.831	2.771	2.709	2.646	2.583	2.521	2.461	2.404	2.352	2.305	2.265	2.233
17	2.735	2.677	2.617	2.556	2.495	2.435	2.378	2.323	2.272	2.227	2.188	2.158
18	2.642	2.586	2.528	2.469	2.411	2.353	2.297	2.244	2.195	2.152	2.114	2.085
19	2.552	2.498	2.442	2.385	2.329	2.273	2.219	2.168	2.121	2.079	2.043	2.014
20	2.466	2.413	2.359	2.305	2.250	2.196	2.144	2.095	2.049	2.009	1.974	1.946
21	2.382	2.332	2.279	2.227	2.174	2.122	2.071	2.024	1.980	1.941	1.907	1.880
22	2.301	2.253	2.202	2.151	2.100	2.050	2.001	1.956	1.913	1.875	1.843	1.816
23	2.223	2.176	2.128	2.078	2.029	1.981	1.934	1.890	1.849	1.812	1.780	1.755
24	2.148	2.103	2.056	2.008	1.961	1.914	1.869	1.826	1.786	1.751	1.720	1.696
25	2.076	2.032	1.986	1.940	1.894	1.849	1.806	1.764	1.726	1.692	1.662	1.639
26	2.006	1.963	1.919	1.875	1.830	1.787	1.745	1.705	1.668	1.635	1.606	1.583
27	1.938	1.897	1.854	1.812	1.769	1.727	1.686	1.648	1.612	1.580	1.552	1.530
28	1.873	1.833	1.792	1.751	1.709	1.669	1.629	1.592	1.558	1.527	1.500	1.479
29	1.810	1.771	1.732	1.692	1.652	1.612	1.575	1.539	1.506	1.476	1.450	1.429
30+	1.749	1.712	1.673	1.635	1.596	1.558	1.522	1.487	1.455	1.426	1.401	1.381
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	2.290	2.279	2.285	2.309	2.359	2.442	2.570	2.763	3.051	3.485		
16	2.212	2.202	2.207	2.230	2.277	2.356	2.479	2.665	2.941	3.357		
17	2.136	2.127	2.131	2.153	2.199	2.274	2.392	2.570	2.835	3.234		
18	2.064	2.054	2.058	2.079	2.123	2.195	2.308	2.478	2.732	3.115		
19	1.994	1.984	1.988	2.008	2.049	2.119	2.227	2.390	2.634	3.001		
20	1.926	1.917	1.920	1.939	1.978	2.045	2.149	2.305	2.539	2.891		
21	1.861	1.852	1.855	1.873	1.910	1.974	2.073	2.223	2.447	2.785		
22	1.798	1.789	1.791	1.809	1.844	1.905	2.000	2.144	2.359	2.683		
23	1.737	1.728	1.731	1.747	1.781	1.839	1.930	2.068	2.274	2.585		
24	1.678	1.670	1.672	1.687	1.720	1.775	1.863	1.995	2.193	2.491		
25	1.622	1.613	1.615	1.629	1.661	1.714	1.797	1.924	2.114	2.400		
26	1.567	1.559	1.560	1.574	1.604	1.655	1.735	1.856	2.038	2.312		
27	1.514	1.506	1.507	1.520	1.549	1.597	1.674	1.790	1.965	2.228		
28	1.463	1.455	1.456	1.468	1.496	1.542	1.616	1.727	1.894	2.147		
29	1.414	1.406	1.407	1.418	1.444	1.489	1.559	1.666	1.827	2.069		
30+	1.366	1.359	1.359	1.370	1.395	1.438	1.505	1.607	1.761	1.994		

表 C.13 女性食管癌、骨和关节恶性肿瘤 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	24.082	20.140	17.038	14.562	12.562	10.928	9.580	8.458	7.516	6.719	6.039	5.456
16	—	19.543	16.532	14.130	12.188	10.603	9.295	8.205	7.291	6.517	5.858	5.292
17	—	—	16.042	13.710	11.826	10.287	9.017	7.960	7.073	6.322	5.681	5.132
18	—	—	—	13.303	11.475	9.981	8.749	7.723	6.861	6.132	5.511	4.977
19	—	—	—	—	11.134	9.684	8.488	7.492	6.656	5.948	5.345	4.827
20	—	—	—	—	—	9.396	8.235	7.268	6.456	5.770	5.184	4.682
21	—	—	—	—	—	—	7.989	7.051	6.263	5.596	5.028	4.541
22	—	—	—	—	—	—	—	6.841	6.076	5.429	4.877	4.404
23	—	—	—	—	—	—	—	—	5.894	5.266	4.730	4.271
24	—	—	—	—	—	—	—	—	—	5.108	4.588	4.142
25	—	—	—	—	—	—	—	—	—	—	4.450	4.018
26	—	—	—	—	—	—	—	—	—	—	—	3.897
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	4.953	4.515	4.133	3.797	3.499	3.236	3.000	2.789	2.599	2.427	2.271	2.130
16	4.803	4.378	4.007	3.681	3.392	3.136	2.908	2.703	2.518	2.352	2.200	2.063
17	4.658	4.245	3.885	3.568	3.288	3.040	2.818	2.619	2.440	2.278	2.132	1.998
18	4.517	4.117	3.767	3.459	3.188	2.946	2.731	2.538	2.365	2.208	2.065	1.936
19	4.380	3.992	3.652	3.354	3.090	2.856	2.647	2.460	2.291	2.139	2.001	1.875
20	4.248	3.871	3.541	3.251	2.995	2.768	2.565	2.384	2.220	2.072	1.938	1.817
21	4.119	3.753	3.433	3.152	2.904	2.683	2.486	2.310	2.151	2.008	1.878	1.760
22	3.995	3.639	3.329	3.056	2.815	2.601	2.410	2.239	2.085	1.946	1.820	1.705
23	3.874	3.529	3.228	2.963	2.729	2.521	2.336	2.170	2.020	1.885	1.763	1.652
24	3.757	3.422	3.130	2.873	2.645	2.444	2.264	2.103	1.958	1.827	1.708	1.600
25	3.644	3.319	3.035	2.785	2.565	2.369	2.194	2.038	1.897	1.770	1.655	1.550
26	3.534	3.218	2.942	2.700	2.486	2.296	2.127	1.975	1.839	1.715	1.604	1.502
27	3.427	3.121	2.853	2.618	2.410	2.226	2.062	1.914	1.782	1.662	1.554	1.455
28	—	3.026	2.767	2.538	2.337	2.158	1.998	1.855	1.727	1.611	1.505	1.410
29	—	—	2.683	2.461	2.265	2.092	1.937	1.798	1.673	1.561	1.459	1.366
30+	—	—	—	2.386	2.196	2.028	1.878	1.743	1.622	1.513	1.414	1.323
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	2.000	1.881	1.772	1.672	1.579	1.493	1.414	1.340	1.271	1.207	1.148	1.092

表 C.13 女性食管癌、骨和关节恶性肿瘤 ERR_{1Gy} 值 (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
16	1.937	1.822	1.716	1.619	1.529	1.446	1.369	1.297	1.230	1.169	1.111	1.057
17	1.876	1.765	1.662	1.568	1.480	1.400	1.325	1.256	1.191	1.131	1.075	1.023
18	1.817	1.709	1.610	1.518	1.433	1.355	1.283	1.216	1.153	1.095	1.041	0.990
19	1.760	1.655	1.559	1.470	1.388	1.312	1.242	1.177	1.116	1.060	1.007	0.958
20	1.705	1.603	1.510	1.424	1.344	1.271	1.203	1.139	1.081	1.026	0.975	0.928
21	1.652	1.553	1.462	1.379	1.302	1.230	1.164	1.103	1.046	0.993	0.944	0.898
22	1.600	1.504	1.416	1.335	1.260	1.191	1.127	1.068	1.013	0.962	0.914	0.869
23	1.550	1.457	1.372	1.293	1.221	1.154	1.092	1.034	0.981	0.931	0.884	0.841
24	1.502	1.411	1.329	1.252	1.182	1.117	1.057	1.001	0.949	0.901	0.856	0.814
25	1.455	1.367	1.287	1.213	1.145	1.082	1.023	0.969	0.919	0.872	0.829	0.788
26	1.409	1.324	1.246	1.175	1.109	1.048	0.991	0.939	0.890	0.845	0.802	0.763
27	1.365	1.283	1.207	1.138	1.074	1.014	0.960	0.909	0.862	0.818	0.777	0.739
28	1.323	1.243	1.169	1.102	1.040	0.982	0.929	0.880	0.834	0.792	0.752	0.715
29	1.281	1.204	1.133	1.067	1.007	0.951	0.900	0.852	0.808	0.767	0.728	0.692
30+	1.241	1.166	1.097	1.034	0.975	0.921	0.871	0.825	0.782	0.742	0.705	0.670
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	1.040	0.992	0.946	0.904	0.864	0.826	0.791	0.759	0.728	0.699	0.672	0.646
16	1.007	0.960	0.916	0.874	0.836	0.800	0.766	0.734	0.704	0.676	0.650	0.625
17	0.974	0.929	0.886	0.846	0.809	0.774	0.741	0.710	0.681	0.654	0.628	0.604
18	0.943	0.899	0.857	0.819	0.783	0.749	0.717	0.687	0.659	0.633	0.608	0.585
19	0.913	0.870	0.830	0.792	0.757	0.724	0.694	0.665	0.637	0.612	0.588	0.565
20	0.883	0.842	0.803	0.767	0.733	0.701	0.671	0.643	0.617	0.592	0.569	0.547
21	0.855	0.815	0.777	0.742	0.709	0.678	0.649	0.622	0.597	0.573	0.550	0.529
22	0.827	0.789	0.752	0.718	0.686	0.656	0.628	0.602	0.577	0.554	0.532	0.512
23	0.801	0.763	0.728	0.695	0.664	0.635	0.608	0.582	0.559	0.536	0.515	0.495
24	0.775	0.739	0.705	0.673	0.643	0.615	0.588	0.564	0.540	0.519	0.498	0.479
25	0.750	0.715	0.682	0.651	0.622	0.595	0.569	0.545	0.523	0.502	0.482	0.463
26	0.726	0.692	0.660	0.630	0.602	0.576	0.551	0.528	0.506	0.486	0.466	0.448
27	0.703	0.670	0.639	0.610	0.583	0.557	0.533	0.511	0.490	0.470	0.451	0.434
28	0.681	0.648	0.618	0.590	0.564	0.539	0.516	0.494	0.474	0.455	0.437	0.420
29	0.659	0.628	0.599	0.571	0.546	0.522	0.499	0.478	0.458	0.440	0.422	0.406
30+	0.638	0.608	0.579	0.553	0.528	0.505	0.483	0.463	0.444	0.426	0.409	0.393

表 C.13 女性食管癌、骨和关节恶性肿瘤 ERR_{16y} 值 (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	0.622	0.599	0.578	0.558	0.540	0.522	0.506	0.490	0.476	0.462	0.450	0.438
16	0.602	0.580	0.559	0.540	0.522	0.505	0.489	0.474	0.460	0.447	0.435	0.423
17	0.582	0.561	0.541	0.522	0.505	0.488	0.473	0.458	0.445	0.432	0.420	0.409
18	0.563	0.542	0.523	0.505	0.488	0.472	0.457	0.443	0.430	0.418	0.406	0.395
19	0.544	0.524	0.506	0.488	0.472	0.456	0.442	0.428	0.416	0.404	0.393	0.382
20	0.527	0.507	0.489	0.472	0.456	0.441	0.427	0.414	0.402	0.390	0.380	0.369
21	0.509	0.491	0.473	0.457	0.441	0.427	0.413	0.401	0.389	0.377	0.367	0.357
22	0.493	0.475	0.458	0.442	0.427	0.413	0.400	0.387	0.376	0.365	0.355	0.345
23	0.477	0.459	0.443	0.427	0.413	0.399	0.386	0.374	0.363	0.353	0.343	0.334
24	0.461	0.444	0.428	0.413	0.399	0.386	0.374	0.362	0.351	0.341	0.331	0.323
25	0.446	0.430	0.414	0.400	0.386	0.373	0.361	0.350	0.340	0.330	0.320	0.312
26	0.431	0.416	0.401	0.387	0.373	0.361	0.350	0.339	0.328	0.319	0.310	0.301
27	0.417	0.402	0.388	0.374	0.361	0.349	0.338	0.327	0.318	0.308	0.300	0.291
28	0.404	0.389	0.375	0.362	0.349	0.338	0.327	0.317	0.307	0.298	0.290	0.282
29	0.391	0.376	0.363	0.350	0.338	0.327	0.316	0.306	0.297	0.288	0.280	0.272
30+	0.378	0.364	0.351	0.339	0.327	0.316	0.306	0.296	0.287	0.279	0.271	0.263
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	0.427	0.417	0.407	0.398	0.390	0.383	0.376	0.370	0.364	0.359		
16	0.413	0.403	0.393	0.385	0.377	0.370	0.363	0.357	0.352	0.347		
17	0.399	0.389	0.380	0.372	0.364	0.357	0.351	0.345	0.340	0.335		
18	0.385	0.376	0.367	0.359	0.352	0.345	0.339	0.333	0.328	0.323		
19	0.372	0.363	0.355	0.347	0.340	0.333	0.327	0.322	0.317	0.312		
20	0.360	0.351	0.343	0.335	0.328	0.322	0.316	0.311	0.306	0.301		
21	0.348	0.339	0.332	0.324	0.317	0.311	0.305	0.300	0.295	0.291		
22	0.336	0.328	0.320	0.313	0.307	0.301	0.295	0.290	0.285	0.281		
23	0.325	0.317	0.310	0.303	0.296	0.290	0.285	0.280	0.276	0.271		
24	0.314	0.306	0.299	0.293	0.286	0.281	0.275	0.270	0.266	0.262		
25	0.304	0.296	0.289	0.283	0.277	0.271	0.266	0.261	0.257	0.253		
26	0.294	0.286	0.280	0.273	0.267	0.262	0.257	0.252	0.248	0.245		
27	0.284	0.277	0.270	0.264	0.258	0.253	0.248	0.244	0.240	0.236		
28	0.274	0.268	0.261	0.255	0.250	0.245	0.240	0.236	0.232	0.228		
29	0.265	0.259	0.252	0.247	0.241	0.236	0.232	0.228	0.224	0.220		
30+	0.256	0.250	0.244	0.238	0.233	0.228	0.224	0.220	0.216	0.213		

C.4 乳腺癌超额危险系数

乳腺癌 ERR_{10y} 值见表C.14和表C.15。

表 C.14 男性乳腺癌 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	243.631	275.344	302.419	324.070	340.006	350.359	355.582	356.338	353.398	347.558	339.579	330.148
16	—	261.915	287.669	308.265	323.424	333.272	338.240	338.959	336.162	330.607	323.017	314.046
17	—	—	273.640	293.231	307.650	317.018	321.744	322.428	319.768	314.483	307.263	298.730
18	—	—	—	278.930	292.646	301.557	306.053	306.703	304.172	299.146	292.278	284.161
19	—	—	—	—	278.374	286.850	291.126	291.745	289.338	284.556	278.023	270.302
20	—	—	—	—	—	272.860	276.928	277.516	275.227	270.678	264.464	257.119
21	—	—	—	—	—	—	263.422	263.982	261.804	257.477	251.566	244.579
22	—	—	—	—	—	—	—	251.107	249.035	244.920	239.297	232.651
23	—	—	—	—	—	—	—	—	236.890	232.975	227.626	221.305
24	—	—	—	—	—	—	—	—	—	221.613	216.525	210.511
25	—	—	—	—	—	—	—	—	—	—	205.965	200.245
26	—	—	—	—	—	—	—	—	—	—	—	190.479
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	319.856	309.194	298.554	288.236	278.464	269.396	261.139	253.757	247.282	241.723	237.072	233.306
16	304.257	294.115	283.993	274.178	264.883	256.258	248.403	241.381	235.222	229.934	225.510	221.928
17	289.418	279.771	270.143	260.807	251.964	243.760	236.289	229.609	223.750	218.720	214.511	211.104
18	275.303	266.126	256.968	248.087	239.676	231.872	224.765	218.411	212.838	208.053	204.049	200.809
19	261.876	253.147	244.435	235.988	227.987	220.563	213.803	207.759	202.457	197.906	194.098	191.015
20	249.104	240.801	232.514	224.478	216.868	209.806	203.376	197.626	192.583	188.254	184.632	181.699
21	236.955	229.057	221.174	213.530	206.291	199.574	193.457	187.988	183.191	179.073	175.627	172.838
22	225.399	217.886	210.387	203.116	196.230	189.840	184.022	178.819	174.257	170.339	167.062	164.408
23	214.406	207.259	200.127	193.210	186.660	180.582	175.047	170.098	165.758	162.032	158.914	156.390
24	203.949	197.151	190.366	183.787	177.556	171.775	166.510	161.803	157.674	154.129	151.164	148.763
25	194.003	187.536	181.082	174.824	168.897	163.397	158.389	153.911	149.984	146.612	143.791	141.508
26	184.541	178.390	172.251	166.298	160.660	155.428	150.664	146.405	142.669	139.462	136.778	134.606
27	175.541	169.690	163.850	158.187	152.824	147.848	143.316	139.265	135.711	132.660	130.108	128.041
28	—	161.414	155.859	150.472	145.371	140.637	136.327	132.473	129.093	126.191	123.762	121.797
29	—	—	148.257	143.134	138.281	133.778	129.678	126.012	122.797	120.036	117.726	115.857
30	—	—	—	136.153	131.537	127.254	123.353	119.866	116.808	114.182	111.985	110.206
31	—	—	—	—	125.122	121.048	117.337	114.020	111.111	108.613	106.523	104.831

表 C.14 男性乳腺癌 $ERR_{1\text{Gy}}$ 值 (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
32	—	—	—	—	—	115.144	111.615	108.460	105.692	103.316	101.328	99.719
33	—	—	—	—	—	—	106.171	103.170	100.537	98.277	96.386	94.855
34	—	—	—	—	—	—	—	98.138	95.634	93.484	91.685	90.229
35	—	—	—	—	—	—	—	—	90.970	88.925	87.214	85.829
36	—	—	—	—	—	—	—	—	—	84.588	82.960	81.643
37	—	—	—	—	—	—	—	—	—	—	78.914	77.661
38	—	—	—	—	—	—	—	—	—	—	—	73.873
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	230.397	228.308	226.997	226.418	226.525	227.266	228.585	230.426	232.726	235.420	238.437	241.704
16	219.161	217.173	215.926	215.376	215.477	216.182	217.437	219.188	221.376	223.939	226.809	229.916
17	208.472	206.582	205.395	204.872	204.968	205.638	206.832	208.498	210.579	213.017	215.747	218.702
18	198.305	196.506	195.378	194.880	194.972	195.609	196.745	198.330	200.309	202.628	205.225	208.036
19	188.634	186.923	185.849	185.376	185.463	186.069	187.150	188.657	190.540	192.746	195.216	197.890
20	179.434	177.806	176.785	176.335	176.418	176.995	178.022	179.456	181.247	183.345	185.695	188.239
21	170.683	169.135	168.163	167.735	167.814	168.362	169.340	170.704	172.408	174.404	176.639	179.058
22	162.358	160.886	159.962	159.554	159.630	160.151	161.081	162.379	163.999	165.898	168.024	170.326
23	154.440	153.039	152.160	151.773	151.844	152.341	153.225	154.459	156.001	157.807	159.829	162.019
24	146.908	145.576	144.739	144.371	144.439	144.911	145.752	146.926	148.393	150.111	152.034	154.117
25	139.743	138.476	137.680	137.330	137.394	137.844	138.644	139.760	141.156	142.790	144.620	146.601
26	132.928	131.722	130.966	130.632	130.694	131.121	131.882	132.944	134.271	135.826	137.566	139.451
27	126.445	125.298	124.578	124.261	124.320	124.726	125.450	126.461	127.723	129.201	130.857	132.650
28	120.278	119.187	118.503	118.201	118.256	118.643	119.332	120.293	121.494	122.900	124.475	126.180
29	114.412	113.374	112.723	112.436	112.489	112.857	113.512	114.426	115.568	116.906	118.405	120.026
30	108.832	107.845	107.226	106.952	107.003	107.353	107.976	108.846	109.932	111.205	112.630	114.173
31	103.524	102.585	101.996	101.736	101.784	102.117	102.710	103.537	104.571	105.781	107.137	108.604
32	98.475	97.582	97.022	96.775	96.820	97.137	97.701	98.488	99.471	100.622	101.912	103.308
33	93.673	92.823	92.290	92.055	92.098	92.399	92.936	93.684	94.619	95.715	96.941	98.269
34	89.104	88.296	87.789	87.565	87.607	87.893	88.403	89.115	90.005	91.047	92.214	93.477
35	84.758	83.990	83.507	83.295	83.334	83.606	84.092	84.769	85.615	86.606	87.716	88.918
36	80.625	79.894	79.435	79.232	79.270	79.529	79.991	80.635	81.440	82.382	83.438	84.581
37	76.693	75.997	75.561	75.368	75.404	75.650	76.089	76.702	77.468	78.365	79.369	80.456
38	72.952	72.291	71.875	71.692	71.726	71.961	72.378	72.961	73.690	74.543	75.498	76.532

表 C.14 男性乳腺癌 $ERR_{1\text{Gy}}$ 值 (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
39	69.394	68.765	68.370	68.196	68.228	68.451	68.849	69.403	70.096	70.907	71.816	72.800
40	—	65.411	65.036	64.870	64.901	65.113	65.491	66.018	66.677	67.449	68.313	69.249
41	—	—	61.864	61.706	61.735	61.937	62.297	62.798	63.425	64.159	64.982	65.872
42	—	—	—	58.697	58.724	58.916	59.259	59.736	60.332	61.030	61.813	62.659
43	—	—	—	—	55.860	56.043	56.368	56.822	57.390	58.054	58.798	59.603
44	—	—	—	—	—	53.310	53.619	54.051	54.591	55.223	55.930	56.696
45	—	—	—	—	—	—	51.004	51.415	51.928	52.529	53.203	53.931
46	—	—	—	—	—	—	—	48.907	49.396	49.967	50.608	51.301
47	—	—	—	—	—	—	—	—	46.987	47.531	48.140	48.799
48	—	—	—	—	—	—	—	—	—	45.212	45.792	46.419
49	—	—	—	—	—	—	—	—	—	—	43.559	44.155
50	—	—	—	—	—	—	—	—	—	—	—	42.002
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	233.300	225.443	218.014	210.913	204.055	197.373	190.811	184.332	177.909	171.530	165.194	158.912
16	221.922	214.448	207.382	200.627	194.103	187.747	181.505	175.342	169.232	163.164	157.137	151.162
17	211.099	203.989	197.267	190.842	184.637	178.590	172.653	166.790	160.978	155.206	149.473	143.790
18	200.804	194.041	187.647	181.534	175.632	169.880	164.233	158.656	153.127	147.637	142.183	136.777
19	191.010	184.577	178.495	172.681	167.066	161.595	156.223	150.918	145.659	140.436	135.249	130.107
20	181.695	175.575	169.790	164.259	158.918	153.714	148.604	143.558	138.555	133.587	128.653	123.761
21	172.833	167.012	161.509	156.248	151.168	146.217	141.356	136.556	131.798	127.072	122.378	117.725
22	164.404	158.867	153.632	148.628	143.795	139.086	134.462	129.896	125.370	120.875	116.410	111.984
23	156.386	151.119	146.139	141.379	136.782	132.303	127.904	123.561	119.256	114.980	110.733	106.522
24	148.759	143.749	139.012	134.484	130.111	125.850	121.666	117.535	113.440	109.372	105.332	101.327
25	141.504	136.738	132.232	127.925	123.766	119.713	115.733	111.803	107.907	104.038	100.195	96.385
26	134.603	130.069	125.783	121.686	117.730	113.874	110.088	106.350	102.644	98.964	95.308	91.685
27	128.038	123.726	119.649	115.751	111.988	108.320	104.719	101.163	97.638	94.137	90.660	87.213
28	121.794	117.692	113.813	110.106	106.526	103.038	99.612	96.230	92.876	89.546	86.239	82.960
29	115.854	111.952	108.263	104.736	101.331	98.012	94.754	91.536	88.347	85.179	82.033	78.914
30	110.203	106.492	102.983	99.628	96.389	93.232	90.133	87.072	84.038	81.025	78.032	75.065
31	104.829	101.298	97.960	94.769	91.688	88.685	85.737	82.826	79.940	77.073	74.226	71.404
32	99.716	96.358	93.183	90.147	87.216	84.360	81.555	78.786	76.041	73.314	70.606	67.922
33	94.853	91.658	88.638	85.751	82.963	80.246	77.578	74.944	72.332	69.739	67.163	64.609

表 C.14 男性乳腺癌 ERR_{1Gy} 值（续）

受照年龄 (<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁											
	51	52	53	54	55	56	57	58	59	60	61	62
34	90.227	87.188	84.315	81.569	78.917	76.332	73.794	71.289	68.805	66.337	63.887	61.458
35	85.826	82.936	80.203	77.591	75.068	72.609	70.195	67.812	65.449	63.102	60.771	58.461
36	81.641	78.891	76.291	73.806	71.407	69.068	66.772	64.505	62.257	60.025	57.807	55.609
37	77.659	75.044	72.571	70.207	67.924	65.700	63.515	61.359	59.221	57.097	54.988	52.897
38	73.871	71.384	69.031	66.783	64.611	62.495	60.418	58.366	56.332	54.313	52.306	50.318
39	70.269	67.902	65.665	63.526	61.460	59.447	57.471	55.520	53.585	51.664	49.755	47.864
40	66.842	64.591	62.462	60.428	58.463	56.548	54.668	52.812	50.972	49.144	47.329	45.529
41	63.582	61.440	59.416	57.480	55.612	53.790	52.002	50.236	48.486	46.747	45.021	43.309
42	60.481	58.444	56.518	54.677	52.899	51.167	49.466	47.786	46.121	44.467	42.825	41.197
43	57.531	55.594	53.762	52.011	50.319	48.671	47.053	45.456	43.872	42.299	40.736	39.187
44	54.725	52.882	51.140	49.474	47.865	46.298	44.759	43.239	41.732	40.236	38.750	37.276
45	52.056	50.303	48.646	47.061	45.531	44.040	42.576	41.130	39.697	38.273	36.860	35.458
46	49.518	47.850	46.273	44.766	43.310	41.892	40.499	39.124	37.761	36.407	35.062	33.729
47	47.103	45.516	44.016	42.583	41.198	39.849	38.524	37.216	35.919	34.631	33.352	32.084
48	44.805	43.296	41.870	40.506	39.189	37.905	36.645	35.401	34.167	32.942	31.725	30.519
49	42.620	41.185	39.828	38.530	37.278	36.057	34.858	33.674	32.501	31.336	30.178	29.031
50	40.542	39.176	37.885	36.651	35.460	34.298	33.158	32.032	30.916	29.807	28.706	27.615
51	38.564	37.266	36.038	34.864	33.730	32.625	31.541	30.470	29.408	28.354	27.306	26.268
52	—	35.448	34.280	33.163	32.085	31.034	30.003	28.984	27.974	26.971	25.975	24.987
53	—	—	32.608	31.546	30.520	29.521	28.539	27.570	26.610	25.655	24.708	23.768
54	—	—	—	30.007	29.032	28.081	27.147	26.226	25.312	24.404	23.503	22.609
55	—	—	—	—	27.616	26.711	25.823	24.947	24.077	23.214	22.357	21.506
56	—	—	—	—	—	25.409	24.564	23.730	22.903	22.082	21.266	20.458
57	—	—	—	—	—	—	23.366	22.573	21.786	21.005	20.229	19.460
58	—	—	—	—	—	—	—	21.472	20.724	19.980	19.242	18.511
59	—	—	—	—	—	—	—	—	19.713	19.006	18.304	17.608
60+	—	—	—	—	—	—	—	—	—	18.079	17.411	16.749
受照年龄 (<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
15	152.706	146.604	140.646	134.868	129.324	124.060	119.135	114.598	110.513	106.938	103.944	101.604
16	145.258	139.454	133.786	128.290	123.017	118.010	113.325	109.009	105.123	101.722	98.875	96.649
17	138.174	132.653	127.262	122.033	117.017	112.255	107.798	103.692	99.996	96.761	94.053	91.935
18	131.435	126.183	121.055	116.082	111.310	106.780	102.540	98.635	95.120	92.042	89.466	87.451
19	125.025	120.029	115.151	110.420	105.882	101.572	97.539	93.825	90.481	87.553	85.102	83.186

表 C.14 男性乳腺癌 ERR_{1Gy} 值 (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
20	118.927	114.175	109.535	105.035	100.718	96.618	92.782	89.249	86.068	83.283	80.952	79.129
21	113.127	108.607	104.193	99.912	95.806	91.906	88.257	84.896	81.870	79.221	77.004	75.270
22	107.610	103.310	99.111	95.040	91.133	87.424	83.953	80.756	77.877	75.358	73.248	71.599
23	102.362	98.272	94.278	90.404	86.689	83.160	79.858	76.817	74.079	71.683	69.676	68.107
24	97.370	93.479	89.680	85.995	82.461	79.104	75.964	73.071	70.466	68.187	66.278	64.786
25	92.621	88.920	85.306	81.801	78.439	75.246	72.259	69.507	67.030	64.861	63.045	61.626
26	88.104	84.583	81.146	77.812	74.614	71.577	68.735	66.117	63.761	61.698	59.971	58.620
27	83.807	80.458	77.188	74.017	70.975	68.086	65.383	62.893	60.651	58.689	57.046	55.762
28	79.719	76.534	73.424	70.407	67.513	64.765	62.194	59.825	57.693	55.826	54.264	53.042
29	75.831	72.801	69.843	66.973	64.220	61.607	59.161	56.908	54.879	53.104	51.617	50.455
30	72.133	69.251	66.436	63.707	61.088	58.602	56.275	54.132	52.203	50.514	49.100	47.994
31	68.615	65.874	63.196	60.600	58.109	55.744	53.531	51.492	49.657	48.050	46.705	45.654
32	65.269	62.661	60.114	57.644	55.275	53.025	50.920	48.981	47.235	45.707	44.427	43.427
33	62.086	59.605	57.182	54.833	52.579	50.439	48.437	46.592	44.931	43.478	42.261	41.309
34	59.058	56.698	54.394	52.159	50.015	47.979	46.074	44.320	42.740	41.357	40.200	39.294
35	56.177	53.933	51.741	49.615	47.576	45.639	43.827	42.158	40.656	39.340	38.239	37.378
36	53.438	51.302	49.217	47.195	45.255	43.413	41.690	40.102	38.673	37.422	36.374	35.555
37	50.831	48.800	46.817	44.894	43.048	41.296	39.657	38.146	36.787	35.596	34.600	33.821
38	48.352	46.420	44.534	42.704	40.949	39.282	37.722	36.286	34.993	33.860	32.913	32.172
39	45.994	44.156	42.362	40.621	38.952	37.366	35.883	34.516	33.286	32.209	31.307	30.603
40	43.751	42.003	40.296	38.640	37.052	35.544	34.133	32.833	31.663	30.638	29.781	29.110
41	41.617	39.954	38.330	36.756	35.245	33.810	32.468	31.232	30.118	29.144	28.328	27.690
42	39.588	38.006	36.461	34.963	33.526	32.161	30.885	29.708	28.649	27.723	26.947	26.340
43	37.657	36.152	34.683	33.258	31.891	30.593	29.378	28.259	27.252	26.371	25.632	25.055
44	35.820	34.389	32.991	31.636	30.336	29.101	27.945	26.881	25.923	25.084	24.382	23.833
45	34.073	32.712	31.382	30.093	28.856	27.682	26.583	25.570	24.659	23.861	23.193	22.671
46	32.412	31.116	29.852	28.625	27.449	26.332	25.286	24.323	23.456	22.697	22.062	21.565
47	30.831	29.599	28.396	27.229	26.110	25.047	24.053	23.137	22.312	21.590	20.986	20.514
48	29.327	28.155	27.011	25.901	24.837	23.826	22.880	22.009	21.224	20.537	19.962	19.513
49	27.897	26.782	25.694	24.638	23.625	22.664	21.764	20.935	20.189	19.536	18.989	18.561
50	26.536	25.476	24.441	23.436	22.473	21.558	20.703	19.914	19.204	18.583	18.063	17.656
51	25.242	24.234	23.249	22.293	21.377	20.507	19.693	18.943	18.268	17.677	17.182	16.795
52	24.011	23.052	22.115	21.206	20.335	19.507	18.732	18.019	17.377	16.815	16.344	15.976
53	22.840	21.927	21.036	20.172	19.343	18.556	17.819	17.140	16.529	15.995	15.547	15.197

表 C.14 男性乳腺癌 ERR_{10y} 值 (续)

受照年龄 (<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁											
	63	64	65	66	67	68	69	70	71	72	73	74
54	21.726	20.858	20.010	19.188	18.399	17.651	16.950	16.304	15.723	15.214	14.789	14.456
55	20.666	19.841	19.034	18.252	17.502	16.790	16.123	15.509	14.956	14.472	14.067	13.751
56	19.659	18.873	18.106	17.362	16.649	15.971	15.337	14.753	14.227	13.767	13.381	13.080
57	18.700	17.953	17.223	16.515	15.837	15.192	14.589	14.033	13.533	13.095	12.729	12.442
58	17.788	17.077	16.383	15.710	15.064	14.451	13.877	13.349	12.873	12.457	12.108	11.835
59	16.920	16.244	15.584	14.944	14.330	13.746	13.201	12.698	12.245	11.849	11.517	11.258
60+	16.095	15.452	14.824	14.215	13.631	13.076	12.557	12.079	11.648	11.271	10.956	10.709
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	100.010	99.269	99.524	100.952	103.806	108.424	115.294	125.107	138.898	158.203		
16	95.132	94.427	94.670	96.028	98.744	103.136	109.671	119.005	132.124	150.487		
17	90.493	89.822	90.053	91.345	93.928	98.106	104.322	113.201	125.680	143.148		
18	86.079	85.441	85.661	86.890	89.347	93.321	99.234	107.680	119.550	136.167		
19	81.881	81.274	81.483	82.652	84.990	88.770	94.395	102.429	113.720	129.526		
20	77.888	77.311	77.509	78.621	80.845	84.441	89.791	97.433	108.174	123.209		
21	74.089	73.540	73.729	74.787	76.902	80.322	85.412	92.681	102.898	117.200		
22	70.476	69.954	70.133	71.140	73.151	76.405	81.246	88.161	97.880	111.484		
23	67.039	66.542	66.713	67.670	69.584	72.679	77.284	83.862	93.106	106.047		
24	63.769	63.297	63.459	64.370	66.190	69.134	73.515	79.772	88.565	100.875		
25	60.659	60.210	60.364	61.230	62.962	65.762	69.929	75.881	84.246	95.955		
26	57.701	57.273	57.420	58.244	59.891	62.555	66.519	72.180	80.137	91.275		
27	54.887	54.480	54.620	55.404	56.970	59.504	63.275	68.660	76.229	86.824		
28	52.210	51.823	51.956	52.701	54.192	56.602	60.189	65.312	72.511	82.589		
29	49.663	49.295	49.422	50.131	51.549	53.842	57.253	62.126	68.975	78.561		
30	47.241	46.891	47.012	47.686	49.035	51.216	54.461	59.096	65.611	74.730		
31	44.937	44.604	44.719	45.361	46.643	48.718	51.805	56.214	62.411	71.085		
32	42.746	42.429	42.538	43.148	44.368	46.342	49.278	53.473	59.367	67.618		
33	40.661	40.360	40.463	41.044	42.205	44.082	46.875	50.865	56.472	64.321		
34	38.678	38.391	38.490	39.042	40.146	41.932	44.589	48.384	53.717	61.184		
35	36.792	36.519	36.613	37.138	38.188	39.887	42.414	46.024	51.098	58.200		
36	34.997	34.738	34.827	35.327	36.326	37.942	40.346	43.780	48.606	55.361		
37	33.290	33.044	33.129	33.604	34.554	36.091	38.378	41.644	46.235	52.661		

表 C.14 男性乳腺癌 ERR_{16y} 值（续）

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
38	31.667	31.432	31.513	31.965	32.869	34.331	36.506	39.613	43.980	50.093
39	30.122	29.899	29.976	30.406	31.266	32.657	34.726	37.681	41.835	47.650
40	28.653	28.441	28.514	28.923	29.741	31.064	33.032	35.844	39.795	45.326
41	27.256	27.054	27.123	27.513	28.291	29.549	31.421	34.096	37.854	43.115
42	25.927	25.734	25.801	26.171	26.911	28.108	29.889	32.433	36.008	41.013
43	24.662	24.479	24.542	24.894	25.598	26.737	28.431	30.851	34.252	39.012
44	23.459	23.286	23.345	23.680	24.350	25.433	27.045	29.346	32.581	37.110
45	22.315	22.150	22.207	22.525	23.162	24.193	25.726	27.915	30.992	35.300
46	21.227	21.070	21.124	21.427	22.033	23.013	24.471	26.554	29.481	33.578
47	20.192	20.042	20.093	20.382	20.958	21.890	23.277	25.259	28.043	31.941
48	19.207	19.065	19.113	19.388	19.936	20.823	22.142	24.027	26.675	30.383
49	18.270	18.135	18.181	18.442	18.964	19.807	21.062	22.855	25.374	28.901
50	17.379	17.250	17.295	17.543	18.039	18.841	20.035	21.740	24.137	27.492
51	16.532	16.409	16.451	16.687	17.159	17.922	19.058	20.680	22.960	26.151
52	15.725	15.609	15.649	15.873	16.322	17.048	18.128	19.671	21.840	24.875
53	14.958	14.848	14.886	15.099	15.526	16.217	17.244	18.712	20.775	23.662
54	14.229	14.123	14.160	14.363	14.769	15.426	16.403	17.799	19.762	22.508
55	13.535	13.435	13.469	13.662	14.049	14.674	15.603	16.931	18.798	21.410
56	12.875	12.779	12.812	12.996	13.364	13.958	14.842	16.106	17.881	20.366
57	12.247	12.156	12.187	12.362	12.712	13.277	14.118	15.320	17.009	19.373
58	11.650	11.563	11.593	11.759	12.092	12.630	13.430	14.573	16.179	18.428
59	11.081	10.999	11.028	11.186	11.502	12.014	12.775	13.862	15.390	17.529
60+	10.541	10.463	10.490	10.640	10.941	11.428	12.152	13.186	14.640	16.674

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	23	24	25	26
15	18.616	15.995	13.501	11.270	9.356	7.760	6.456	5.404	4.564	3.896	3.366	2.948
16	—	15.215	12.843	10.721	8.900	7.381	6.141	5.141	4.341	3.706	3.202	2.804
17	—	—	12.216	10.198	8.466	7.021	5.841	4.890	4.129	3.525	3.046	2.667
18	—	—	—	9.700	8.053	6.679	5.556	4.651	3.928	3.353	2.897	2.537
19	—	—	—	—	7.660	6.353	5.285	4.425	3.736	3.189	2.756	2.413
20	—	—	—	—	—	6.043	5.028	4.209	3.554	3.034	2.622	2.296
21	—	—	—	—	—	—	4.782	4.003	3.381	2.886	2.494	2.184
22	—	—	—	—	—	—	—	3.808	3.216	2.745	2.372	2.077
23	—	—	—	—	—	—	—	—	3.059	2.611	2.256	1.976
24	—	—	—	—	—	—	—	—	—	2.484	2.146	1.879
25	—	—	—	—	—	—	—	—	—	—	2.042	1.788
26	—	—	—	—	—	—	—	—	—	—	—	1.701
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	2.617	2.357	2.153	1.994	1.871	1.779	1.712	1.665	1.636	1.623	1.622	1.632
16	2.489	2.242	2.048	1.896	1.780	1.692	1.628	1.584	1.557	1.543	1.542	1.552
17	2.368	2.133	1.948	1.804	1.693	1.610	1.549	1.507	1.481	1.468	1.467	1.477
18	2.253	2.029	1.853	1.716	1.611	1.531	1.473	1.433	1.408	1.397	1.396	1.404
19	2.143	1.930	1.762	1.632	1.532	1.457	1.402	1.363	1.340	1.328	1.328	1.336
20	2.038	1.835	1.677	1.553	1.457	1.386	1.333	1.297	1.274	1.264	1.263	1.271
21	1.939	1.746	1.595	1.477	1.386	1.318	1.268	1.234	1.212	1.202	1.201	1.209
22	1.844	1.661	1.517	1.405	1.319	1.254	1.206	1.174	1.153	1.143	1.143	1.150
23	1.754	1.580	1.443	1.336	1.254	1.193	1.147	1.116	1.097	1.088	1.087	1.094
24	1.669	1.503	1.373	1.271	1.193	1.134	1.092	1.062	1.043	1.035	1.034	1.040
25	1.587	1.429	1.306	1.209	1.135	1.079	1.038	1.010	0.993	0.984	0.984	0.990
26	1.510	1.360	1.242	1.150	1.080	1.027	0.988	0.961	0.944	0.936	0.936	0.941
27	1.436	1.293	1.181	1.094	1.027	0.976	0.939	0.914	0.898	0.890	0.890	0.896
28	—	1.230	1.124	1.041	0.977	0.929	0.894	0.869	0.854	0.847	0.847	0.852
29	—	—	1.069	0.990	0.929	0.884	0.850	0.827	0.813	0.806	0.805	0.810
30	—	—	—	0.942	0.884	0.840	0.809	0.787	0.773	0.766	0.766	0.771
31	—	—	—	—	0.841	0.799	0.769	0.748	0.735	0.729	0.729	0.733
32	—	—	—	—	—	0.760	0.732	0.712	0.699	0.693	0.693	0.697
33	—	—	—	—	—	—	0.696	0.677	0.665	0.660	0.659	0.663

表 C.15 女性乳腺癌 ERR_{16y} 值 (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
34	—	—	—	—	—	—	—	0.644	0.633	0.627	0.627	0.631
35	—	—	—	—	—	—	—	—	0.602	0.597	0.597	0.600
36	—	—	—	—	—	—	—	—	—	0.568	0.567	0.571
37	—	—	—	—	—	—	—	—	—	—	0.540	0.543
38	—	—	—	—	—	—	—	—	—	—	—	0.517
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	1.652	1.680	1.715	1.756	1.802	1.852	1.905	1.960	2.017	2.075	2.134	2.193
16	1.571	1.598	1.631	1.670	1.714	1.762	1.812	1.864	1.918	1.974	2.030	2.086
17	1.494	1.520	1.552	1.589	1.631	1.676	1.724	1.774	1.825	1.877	1.931	1.984
18	1.422	1.446	1.476	1.511	1.551	1.594	1.640	1.687	1.736	1.786	1.836	1.888
19	1.352	1.375	1.404	1.438	1.475	1.516	1.560	1.605	1.651	1.699	1.747	1.796
20	1.286	1.308	1.336	1.368	1.403	1.442	1.484	1.526	1.571	1.616	1.662	1.708
21	1.224	1.244	1.270	1.301	1.335	1.372	1.411	1.452	1.494	1.537	1.581	1.625
22	1.164	1.184	1.209	1.237	1.270	1.305	1.342	1.381	1.421	1.462	1.503	1.546
23	1.107	1.126	1.150	1.177	1.208	1.241	1.277	1.314	1.352	1.391	1.430	1.470
24	1.053	1.071	1.094	1.120	1.149	1.181	1.215	1.250	1.286	1.323	1.360	1.398
25	1.002	1.019	1.040	1.065	1.093	1.123	1.155	1.189	1.223	1.258	1.294	1.330
26	0.953	0.969	0.989	1.013	1.040	1.068	1.099	1.131	1.164	1.197	1.231	1.265
27	0.906	0.922	0.941	0.964	0.989	1.016	1.045	1.076	1.107	1.139	1.171	1.204
28	0.862	0.877	0.895	0.917	0.941	0.967	0.994	1.023	1.053	1.083	1.114	1.145
29	0.820	0.834	0.852	0.872	0.895	0.920	0.946	0.973	1.002	1.030	1.059	1.089
30	0.780	0.793	0.810	0.830	0.851	0.875	0.900	0.926	0.953	0.980	1.008	1.036
31	0.742	0.755	0.771	0.789	0.810	0.832	0.856	0.881	0.906	0.932	0.959	0.985
32	0.706	0.718	0.733	0.751	0.770	0.792	0.814	0.838	0.862	0.887	0.912	0.937
33	0.672	0.683	0.697	0.714	0.733	0.753	0.774	0.797	0.820	0.844	0.867	0.892
34	0.639	0.650	0.663	0.679	0.697	0.716	0.737	0.758	0.780	0.802	0.825	0.848
35	0.608	0.618	0.631	0.646	0.663	0.681	0.701	0.721	0.742	0.763	0.785	0.807
36	0.578	0.588	0.600	0.615	0.631	0.648	0.667	0.686	0.706	0.726	0.747	0.767
37	0.550	0.559	0.571	0.585	0.600	0.616	0.634	0.652	0.671	0.691	0.710	0.730
38	0.523	0.532	0.543	0.556	0.571	0.586	0.603	0.621	0.639	0.657	0.676	0.694
39	0.497	0.506	0.517	0.529	0.543	0.558	0.574	0.590	0.607	0.625	0.643	0.661
40	—	0.481	0.491	0.503	0.516	0.531	0.546	0.562	0.578	0.594	0.611	0.628

表 C.15 女性乳腺癌 ERR_{16y} 值 (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
41	—	—	0.467	0.479	0.491	0.505	0.519	0.534	0.550	0.565	0.581	0.598
42	—	—	—	0.455	0.467	0.480	0.494	0.508	0.523	0.538	0.553	0.569
43	—	—	—	—	0.444	0.457	0.470	0.483	0.497	0.512	0.526	0.541
44	—	—	—	—	—	0.434	0.447	0.460	0.473	0.487	0.500	0.514
45	—	—	—	—	—	—	0.425	0.437	0.450	0.463	0.476	0.489
46	—	—	—	—	—	—	—	0.416	0.428	0.440	0.453	0.466
47	—	—	—	—	—	—	—	—	0.407	0.419	0.431	0.443
48	—	—	—	—	—	—	—	—	—	0.398	0.410	0.421
49	—	—	—	—	—	—	—	—	—	—	0.390	0.401
50	—	—	—	—	—	—	—	—	—	—	—	0.381
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	2.145	2.100	2.058	2.021	1.988	1.961	1.941	1.928	1.925	1.931	1.950	1.981
16	2.040	1.998	1.958	1.922	1.891	1.865	1.846	1.834	1.831	1.837	1.854	1.885
17	1.941	1.900	1.862	1.828	1.799	1.774	1.756	1.745	1.741	1.747	1.764	1.793
18	1.846	1.807	1.772	1.739	1.711	1.688	1.670	1.660	1.657	1.662	1.678	1.705
19	1.756	1.719	1.685	1.654	1.628	1.606	1.589	1.579	1.576	1.581	1.596	1.622
20	1.671	1.635	1.603	1.574	1.548	1.527	1.511	1.502	1.499	1.504	1.518	1.543
21	1.589	1.556	1.525	1.497	1.473	1.453	1.438	1.428	1.426	1.431	1.444	1.468
22	1.512	1.480	1.450	1.424	1.401	1.382	1.368	1.359	1.356	1.361	1.374	1.396
23	1.438	1.408	1.380	1.355	1.333	1.314	1.301	1.292	1.290	1.295	1.307	1.328
24	1.368	1.339	1.312	1.288	1.268	1.250	1.237	1.229	1.227	1.231	1.243	1.263
25	1.301	1.274	1.248	1.226	1.206	1.189	1.177	1.169	1.167	1.171	1.182	1.202
26	1.238	1.212	1.188	1.166	1.147	1.131	1.120	1.112	1.110	1.114	1.125	1.143
27	1.177	1.152	1.130	1.109	1.091	1.076	1.065	1.058	1.056	1.060	1.070	1.087
28	1.120	1.096	1.075	1.055	1.038	1.024	1.013	1.007	1.005	1.008	1.018	1.034
29	1.065	1.043	1.022	1.003	0.987	0.974	0.964	0.957	0.956	0.959	0.968	0.984
30	1.013	0.992	0.972	0.955	0.939	0.926	0.917	0.911	0.909	0.912	0.921	0.936
31	0.964	0.944	0.925	0.908	0.893	0.881	0.872	0.866	0.865	0.868	0.876	0.890
32	0.917	0.898	0.880	0.864	0.850	0.838	0.829	0.824	0.823	0.825	0.833	0.847
33	0.872	0.854	0.837	0.822	0.808	0.797	0.789	0.784	0.782	0.785	0.793	0.805
34	0.830	0.812	0.796	0.781	0.769	0.758	0.751	0.746	0.744	0.747	0.754	0.766
35	0.789	0.773	0.757	0.743	0.731	0.721	0.714	0.709	0.708	0.710	0.717	0.729

表 C.15 女性乳腺癌 ERR_{16y} 值 (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
36	0.751	0.735	0.720	0.707	0.696	0.686	0.679	0.675	0.673	0.676	0.682	0.693
37	0.714	0.699	0.685	0.673	0.662	0.653	0.646	0.642	0.641	0.643	0.649	0.659
38	0.679	0.665	0.652	0.640	0.629	0.621	0.614	0.611	0.609	0.612	0.617	0.627
39	0.646	0.632	0.620	0.609	0.599	0.591	0.585	0.581	0.580	0.582	0.587	0.597
40	0.615	0.602	0.590	0.579	0.570	0.562	0.556	0.552	0.551	0.553	0.559	0.568
41	0.585	0.572	0.561	0.551	0.542	0.534	0.529	0.525	0.525	0.526	0.531	0.540
42	0.556	0.544	0.534	0.524	0.515	0.508	0.503	0.500	0.499	0.501	0.505	0.514
43	0.529	0.518	0.508	0.498	0.490	0.484	0.479	0.475	0.475	0.476	0.481	0.489
44	0.503	0.493	0.483	0.474	0.466	0.460	0.455	0.452	0.451	0.453	0.457	0.465
45	0.479	0.469	0.459	0.451	0.444	0.438	0.433	0.430	0.429	0.431	0.435	0.442
46	0.455	0.446	0.437	0.429	0.422	0.416	0.412	0.409	0.408	0.410	0.414	0.421
47	0.433	0.424	0.416	0.408	0.401	0.396	0.392	0.389	0.389	0.390	0.394	0.400
48	0.412	0.403	0.395	0.388	0.382	0.377	0.373	0.370	0.370	0.371	0.374	0.380
49	0.392	0.384	0.376	0.369	0.363	0.358	0.355	0.352	0.352	0.353	0.356	0.362
50	0.373	0.365	0.358	0.351	0.345	0.341	0.337	0.335	0.334	0.336	0.339	0.344
51	0.355	0.347	0.340	0.334	0.329	0.324	0.321	0.319	0.318	0.319	0.322	0.327
52	—	0.330	0.324	0.318	0.313	0.308	0.305	0.303	0.303	0.304	0.307	0.312
53	—	—	0.308	0.302	0.297	0.293	0.290	0.288	0.288	0.289	0.292	0.296
54	—	—	—	0.287	0.283	0.279	0.276	0.274	0.274	0.275	0.277	0.282
55	—	—	—	—	0.269	0.265	0.263	0.261	0.260	0.261	0.264	0.268
56	—	—	—	—	—	0.252	0.250	0.248	0.248	0.249	0.251	0.255
57	—	—	—	—	—	—	0.238	0.236	0.236	0.236	0.239	0.243
58	—	—	—	—	—	—	—	0.225	0.224	0.225	0.227	0.231
59	—	—	—	—	—	—	—	—	0.213	0.214	0.216	0.220
60+	—	—	—	—	—	—	—	—	—	0.204	0.205	0.209
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	2.028	2.091	2.174	2.278	2.407	2.564	2.750	2.969	3.223	3.511	3.831	4.177
16	1.929	1.989	2.068	2.167	2.290	2.439	2.616	2.824	3.066	3.340	3.645	3.973
17	1.835	1.892	1.967	2.061	2.178	2.320	2.488	2.687	2.916	3.177	3.467	3.780
18	1.745	1.800	1.871	1.961	2.072	2.206	2.367	2.556	2.774	3.022	3.298	3.595
19	1.660	1.712	1.780	1.865	1.971	2.099	2.252	2.431	2.639	2.874	3.137	3.420
20	1.579	1.629	1.693	1.774	1.875	1.996	2.142	2.312	2.510	2.734	2.984	3.253

表 C.15 女性乳腺癌 ERR_{16y} 值 (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
21	1.502	1.549	1.611	1.688	1.783	1.899	2.037	2.200	2.388	2.601	2.838	3.095
22	1.429	1.474	1.532	1.605	1.696	1.806	1.938	2.092	2.271	2.474	2.700	2.944
23	1.359	1.402	1.457	1.527	1.614	1.718	1.843	1.990	2.160	2.353	2.568	2.800
24	1.293	1.333	1.386	1.453	1.535	1.635	1.754	1.893	2.055	2.239	2.443	2.663
25	1.230	1.268	1.319	1.382	1.460	1.555	1.668	1.801	1.955	2.129	2.324	2.534
26	1.170	1.207	1.254	1.314	1.389	1.479	1.587	1.713	1.859	2.026	2.211	2.410
27	1.113	1.148	1.193	1.250	1.321	1.407	1.509	1.629	1.769	1.927	2.103	2.292
28	1.059	1.092	1.135	1.189	1.257	1.338	1.436	1.550	1.683	1.833	2.000	2.181
29	1.007	1.038	1.080	1.131	1.195	1.273	1.366	1.474	1.600	1.743	1.903	2.074
30	0.958	0.988	1.027	1.076	1.137	1.211	1.299	1.403	1.522	1.658	1.810	1.973
31	0.911	0.940	0.977	1.024	1.082	1.152	1.236	1.334	1.448	1.577	1.722	1.877
32	0.867	0.894	0.929	0.974	1.029	1.096	1.175	1.269	1.378	1.501	1.638	1.785
33	0.824	0.850	0.884	0.926	0.979	1.042	1.118	1.207	1.310	1.427	1.558	1.698
34	0.784	0.809	0.841	0.881	0.931	0.991	1.064	1.148	1.246	1.358	1.482	1.615
35	0.746	0.769	0.800	0.838	0.886	0.943	1.012	1.092	1.186	1.292	1.410	1.537
36	0.710	0.732	0.761	0.797	0.842	0.897	0.962	1.039	1.128	1.229	1.341	1.462
37	0.675	0.696	0.724	0.758	0.801	0.853	0.915	0.988	1.073	1.169	1.275	1.390
38	0.642	0.662	0.688	0.721	0.762	0.812	0.871	0.940	1.020	1.112	1.213	1.323
39	0.611	0.630	0.655	0.686	0.725	0.772	0.828	0.894	0.971	1.057	1.154	1.258
40	0.581	0.599	0.623	0.653	0.690	0.734	0.788	0.851	0.923	1.006	1.098	1.197
41	0.553	0.570	0.593	0.621	0.656	0.699	0.750	0.809	0.878	0.957	1.044	1.138
42	0.526	0.542	0.564	0.591	0.624	0.665	0.713	0.770	0.836	0.910	0.993	1.083
43	0.500	0.516	0.536	0.562	0.594	0.632	0.678	0.732	0.795	0.866	0.945	1.030
44	0.476	0.491	0.510	0.534	0.565	0.601	0.645	0.696	0.756	0.824	0.899	0.980
45	0.452	0.467	0.485	0.508	0.537	0.572	0.614	0.663	0.719	0.783	0.855	0.932
46	0.430	0.444	0.461	0.484	0.511	0.544	0.584	0.630	0.684	0.745	0.813	0.887
47	0.409	0.422	0.439	0.460	0.486	0.518	0.555	0.599	0.651	0.709	0.774	0.843
48	0.389	0.402	0.418	0.438	0.462	0.492	0.528	0.570	0.619	0.674	0.736	0.802
49	0.370	0.382	0.397	0.416	0.440	0.468	0.502	0.542	0.589	0.641	0.700	0.763
50	0.352	0.363	0.378	0.396	0.418	0.445	0.478	0.516	0.560	0.610	0.666	0.726
51	0.335	0.346	0.359	0.377	0.398	0.424	0.455	0.491	0.533	0.580	0.633	0.690
52	0.319	0.329	0.342	0.358	0.379	0.403	0.432	0.467	0.507	0.552	0.602	0.657
53	0.303	0.313	0.325	0.341	0.360	0.383	0.411	0.444	0.482	0.525	0.573	0.625

表 C.15 女性乳腺癌 ERR_{16y} 值 (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
54	0.288	0.298	0.309	0.324	0.343	0.365	0.391	0.422	0.459	0.499	0.545	0.594
55	0.274	0.283	0.294	0.308	0.326	0.347	0.372	0.402	0.436	0.475	0.519	0.565
56	0.261	0.269	0.280	0.293	0.310	0.330	0.354	0.382	0.415	0.452	0.493	0.538
57	0.248	0.256	0.266	0.279	0.295	0.314	0.337	0.364	0.395	0.430	0.469	0.512
58	0.236	0.244	0.253	0.265	0.280	0.299	0.320	0.346	0.375	0.409	0.446	0.487
59	0.225	0.232	0.241	0.252	0.267	0.284	0.305	0.329	0.357	0.389	0.425	0.463
60+	0.214	0.220	0.229	0.240	0.254	0.270	0.290	0.313	0.340	0.370	0.404	0.440
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	75	76	77	78	79	80	81	82	83	84+		
15	4.536	4.889	5.208	5.453	5.582	5.549	5.318	4.870	4.224	3.432		
16	4.315	4.651	4.954	5.187	5.310	5.278	5.059	4.633	4.018	3.264		
17	4.104	4.424	4.712	4.934	5.051	5.021	4.812	4.407	3.822	3.105		
18	3.904	4.208	4.482	4.693	4.805	4.776	4.577	4.192	3.636	2.954		
19	3.714	4.003	4.264	4.464	4.571	4.543	4.354	3.987	3.459	2.810		
20	3.533	3.808	4.056	4.246	4.348	4.321	4.142	3.793	3.290	2.673		
21	3.360	3.622	3.858	4.039	4.136	4.111	3.940	3.608	3.129	2.542		
22	3.197	3.445	3.670	3.842	3.934	3.910	3.748	3.432	2.977	2.418		
23	3.041	3.277	3.491	3.655	3.742	3.719	3.565	3.264	2.832	2.300		
24	2.892	3.117	3.320	3.477	3.560	3.538	3.391	3.105	2.694	2.188		
25	2.751	2.965	3.159	3.307	3.386	3.365	3.226	2.954	2.562	2.081		
26	2.617	2.821	3.005	3.146	3.221	3.201	3.068	2.810	2.437	1.980		
27	2.489	2.683	2.858	2.992	3.064	3.045	2.919	2.673	2.318	1.883		
28	2.368	2.552	2.719	2.846	2.914	2.897	2.776	2.542	2.205	1.792		
29	2.253	2.428	2.586	2.708	2.772	2.755	2.641	2.418	2.098	1.704		
30	2.143	2.309	2.460	2.576	2.637	2.621	2.512	2.300	1.995	1.621		
31	2.038	2.197	2.340	2.450	2.508	2.493	2.390	2.188	1.898	1.542		
32	1.939	2.090	2.226	2.330	2.386	2.372	2.273	2.082	1.806	1.467		
33	1.844	1.988	2.117	2.217	2.270	2.256	2.162	1.980	1.717	1.395		
34	1.754	1.891	2.014	2.109	2.159	2.146	2.057	1.883	1.634	1.327		
35	1.669	1.799	1.916	2.006	2.054	2.041	1.956	1.792	1.554	1.262		
36	1.587	1.711	1.822	1.908	1.954	1.942	1.861	1.704	1.478	1.201		
37	1.510	1.627	1.733	1.815	1.858	1.847	1.770	1.621	1.406	1.142		
38	1.436	1.548	1.649	1.726	1.768	1.757	1.684	1.542	1.338	1.087		

表 C.15 女性乳腺癌 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁									
	75	76	77	78	79	80	81	82	83	84+
39	1.366	1.473	1.568	1.642	1.681	1.671	1.602	1.467	1.272	1.034
40	1.300	1.401	1.492	1.562	1.599	1.590	1.524	1.395	1.210	0.983
41	1.236	1.332	1.419	1.486	1.521	1.512	1.449	1.327	1.151	0.935
42	1.176	1.267	1.350	1.414	1.447	1.438	1.379	1.263	1.095	0.890
43	1.119	1.206	1.284	1.345	1.377	1.368	1.311	1.201	1.042	0.846
44	1.064	1.147	1.222	1.279	1.309	1.302	1.247	1.142	0.991	0.805
45	1.012	1.091	1.162	1.217	1.246	1.238	1.187	1.087	0.943	0.766
46	0.963	1.038	1.105	1.157	1.185	1.178	1.129	1.034	0.897	0.728
47	0.916	0.987	1.051	1.101	1.127	1.120	1.074	0.983	0.853	0.693
48	0.871	0.939	1.000	1.047	1.072	1.066	1.021	0.935	0.811	0.659
49	0.829	0.893	0.951	0.996	1.020	1.014	0.972	0.890	0.772	0.627
50	0.788	0.850	0.905	0.948	0.970	0.964	0.924	0.846	0.734	0.596
51	0.750	0.808	0.861	0.901	0.923	0.917	0.879	0.805	0.698	0.567
52	0.713	0.769	0.819	0.857	0.878	0.872	0.836	0.766	0.664	0.540
53	0.678	0.731	0.779	0.816	0.835	0.830	0.795	0.728	0.632	0.513
54	0.645	0.696	0.741	0.776	0.794	0.789	0.757	0.693	0.601	0.488
55	0.614	0.662	0.705	0.738	0.755	0.751	0.720	0.659	0.572	0.464
56	0.584	0.629	0.670	0.702	0.719	0.714	0.685	0.627	0.544	0.442
57	0.555	0.599	0.638	0.668	0.684	0.679	0.651	0.596	0.517	0.420
58	0.528	0.569	0.607	0.635	0.650	0.646	0.619	0.567	0.492	0.400
59	0.503	0.542	0.577	0.604	0.619	0.615	0.589	0.540	0.468	0.380
60+	0.478	0.515	0.549	0.575	0.588	0.585	0.561	0.513	0.445	0.362

C.5 甲状腺癌超额危险系数

甲状腺癌 ERR_{10y} 值见表C.16。

表 C.16 甲状腺癌 ERR_{10y} 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

表 C.16 甲状腺癌 $ERR_{1\text{Gy}}$ 值 (续)

受照年龄 (e) 岁	男性	女性
46	0.140	0.278
47	0.129	0.256
48	0.119	0.236
49	0.109	0.217
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_{10y} 值见表C.17。

表 C.17 男性除慢淋以外白血病 ERR_{10y} 值

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	16	17	18	19	20	21	22	23	24	25	26	27
15	68.176	33.550	22.299	16.737	13.417	11.205	9.620	8.424	7.487	6.729	6.102	5.572
16	—	57.943	29.474	19.972	15.194	12.305	10.360	8.954	7.885	7.041	6.354	5.782
17	—	—	49.218	25.880	17.878	13.786	11.279	9.573	8.329	7.375	6.616	5.995
18	—	—	—	41.781	22.710	15.994	12.500	10.332	8.840	7.742	6.893	6.213
19	—	—	—	—	35.443	19.914	14.297	11.325	9.456	8.156	7.190	6.437
20	—	—	—	—	—	30.044	17.449	12.771	10.253	8.648	7.519	6.672
21	—	—	—	—	—	—	25.447	15.276	11.398	9.273	7.901	6.925
22	—	—	—	—	—	—	—	21.535	13.362	10.163	8.379	7.212
23	—	—	—	—	—	—	—	—	18.208	11.676	9.053	7.564
24	—	—	—	—	—	—	—	—	—	15.382	10.193	8.055
25	—	—	—	—	—	—	—	—	—	—	12.982	8.890
26	—	—	—	—	—	—	—	—	—	—	—	10.946
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	28	29	30	31	32	33	34	35	36	37	38	39
15	5.117	4.722	4.373	4.064	3.786	3.536	3.309	3.103	2.913	2.740	2.580	2.432
16	5.296	4.877	4.510	4.186	3.897	3.637	3.402	3.189	2.993	2.814	2.649	2.497
17	5.474	5.029	4.643	4.304	4.004	3.734	3.491	3.271	3.070	2.886	2.716	2.560
18	5.651	5.178	4.772	4.417	4.105	3.826	3.575	3.349	3.142	2.953	2.780	2.620
19	5.828	5.323	4.894	4.524	4.199	3.911	3.653	3.420	3.209	3.016	2.838	2.675
20	6.005	5.463	5.009	4.621	4.284	3.987	3.723	3.485	3.269	3.072	2.892	2.726
21	6.184	5.597	5.115	4.709	4.359	4.054	3.783	3.540	3.321	3.121	2.939	2.771
22	6.371	5.727	5.211	4.785	4.422	4.108	3.832	3.585	3.363	3.162	2.978	2.809
23	6.576	5.856	5.298	4.847	4.471	4.148	3.867	3.618	3.394	3.192	3.008	2.838
24	6.821	5.989	5.376	4.896	4.504	4.173	3.888	3.637	3.413	3.211	3.027	2.858
25	7.160	6.144	5.449	4.930	4.519	4.180	3.891	3.639	3.416	3.216	3.034	2.867
26	7.745	6.358	5.528	4.952	4.516	4.167	3.875	3.624	3.403	3.206	3.027	2.864
27	9.220	6.740	5.639	4.968	4.495	4.132	3.837	3.588	3.371	3.179	3.005	2.847
28	—	7.760	5.859	4.996	4.460	4.076	3.777	3.530	3.318	3.133	2.966	2.814
29	—	—	6.524	5.088	4.421	3.999	3.691	3.447	3.243	3.066	2.908	2.764
30	—	—	—	5.480	4.414	3.908	3.582	3.339	3.143	2.977	2.829	2.696
31	—	—	—	—	5.436	4.366	3.856	3.528	3.283	3.086	2.917	2.769

表 C.17 男性除慢淋以外白血病 ERR_{10y} 值 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	28	29	30	31	32	33	34	35	36	37	38	39
32	—	—	—	—	—	5.387	4.314	3.803	3.472	3.225	3.026	2.858
33	—	—	—	—	—	—	5.336	4.260	3.746	3.414	3.166	2.967
34	—	—	—	—	—	—	—	5.282	4.204	3.689	3.355	3.106
35	—	—	—	—	—	—	—	—	5.226	4.146	3.629	3.295
36	—	—	—	—	—	—	—	—	—	5.168	4.087	3.569
37	—	—	—	—	—	—	—	—	—	—	5.109	4.027
38	—	—	—	—	—	—	—	—	—	—	—	5.049
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	40	41	42	43	44	45	46	47	48	49	50	51
15	2.295	2.169	2.052	1.943	1.841	1.747	1.660	1.578	1.502	1.431	1.366	1.304
16	2.357	2.226	2.106	1.994	1.889	1.793	1.702	1.618	1.540	1.468	1.400	1.336
17	2.416	2.282	2.158	2.043	1.936	1.837	1.744	1.658	1.578	1.503	1.433	1.368
18	2.472	2.335	2.208	2.091	1.981	1.880	1.785	1.697	1.614	1.538	1.466	1.399
19	2.525	2.385	2.256	2.136	2.024	1.920	1.824	1.733	1.649	1.571	1.498	1.430
20	2.573	2.431	2.300	2.178	2.064	1.959	1.860	1.769	1.683	1.603	1.528	1.459
21	2.616	2.473	2.340	2.216	2.101	1.994	1.894	1.801	1.714	1.633	1.557	1.487
22	2.653	2.509	2.375	2.250	2.134	2.026	1.925	1.831	1.743	1.661	1.584	1.513
23	2.682	2.538	2.404	2.279	2.162	2.054	1.953	1.858	1.769	1.686	1.609	1.536
24	2.703	2.559	2.426	2.301	2.185	2.077	1.975	1.880	1.792	1.709	1.631	1.558
25	2.714	2.572	2.440	2.316	2.201	2.094	1.993	1.899	1.810	1.727	1.649	1.576
26	2.714	2.574	2.445	2.324	2.211	2.105	2.005	1.912	1.824	1.742	1.664	1.591
27	2.701	2.566	2.440	2.322	2.212	2.108	2.011	1.919	1.833	1.751	1.675	1.603
28	2.674	2.545	2.424	2.310	2.204	2.104	2.009	1.920	1.835	1.756	1.681	1.610
29	2.632	2.510	2.395	2.288	2.186	2.090	1.999	1.913	1.832	1.755	1.682	1.612
30	2.574	2.460	2.353	2.253	2.157	2.067	1.981	1.899	1.821	1.747	1.676	1.610
31	2.636	2.514	2.400	2.294	2.194	2.100	2.011	1.926	1.846	1.770	1.698	1.629
32	2.709	2.576	2.453	2.341	2.235	2.137	2.044	1.956	1.873	1.795	1.721	1.651
33	2.797	2.649	2.516	2.394	2.282	2.178	2.080	1.989	1.903	1.822	1.746	1.674
34	2.906	2.737	2.589	2.456	2.335	2.225	2.122	2.026	1.936	1.852	1.773	1.699
35	3.046	2.846	2.677	2.529	2.397	2.278	2.168	2.067	1.973	1.885	1.803	1.726
36	3.234	2.985	2.786	2.617	2.471	2.340	2.222	2.114	2.014	1.922	1.836	1.756
37	3.509	3.174	2.925	2.726	2.559	2.413	2.284	2.167	2.061	1.964	1.873	1.790

表 C.17 男性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	40	41	42	43	44	45	46	47	48	49	50	51
38	3.967	3.449	3.114	2.866	2.668	2.501	2.357	2.229	2.115	2.010	1.915	1.826
39	4.989	3.906	3.389	3.054	2.807	2.610	2.445	2.303	2.177	2.064	1.961	1.868
40	—	4.928	3.846	3.329	2.996	2.750	2.554	2.391	2.250	2.126	2.015	1.914
41	—	—	4.868	3.787	3.271	2.938	2.694	2.500	2.338	2.199	2.077	1.968
42	—	—	—	4.809	3.728	3.213	2.882	2.639	2.447	2.287	2.150	2.030
43	—	—	—	—	4.750	3.671	3.157	2.828	2.587	2.396	2.238	2.103
44	—	—	—	—	—	4.693	3.615	3.103	2.775	2.536	2.347	2.191
45	—	—	—	—	—	—	4.637	3.560	3.050	2.724	2.487	2.300
46	—	—	—	—	—	—	—	4.582	3.508	2.999	2.675	2.440
47	—	—	—	—	—	—	—	—	4.529	3.457	2.950	2.628
48	—	—	—	—	—	—	—	—	—	4.478	3.408	2.903
49	—	—	—	—	—	—	—	—	—	—	4.429	3.361
50	—	—	—	—	—	—	—	—	—	—	—	4.382
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	52	53	54	55	56	57	58	59	60	61	62	63
15	1.247	1.193	1.143	1.097	1.053	1.013	0.975	0.939	0.906	0.875	0.846	0.818
16	1.277	1.222	1.171	1.123	1.078	1.037	0.998	0.961	0.927	0.895	0.865	0.837
17	1.308	1.251	1.198	1.149	1.103	1.060	1.020	0.983	0.948	0.915	0.884	0.855
18	1.337	1.279	1.225	1.175	1.128	1.083	1.042	1.004	0.968	0.934	0.903	0.873
19	1.366	1.307	1.251	1.200	1.151	1.106	1.064	1.025	0.988	0.954	0.921	0.891
20	1.394	1.333	1.277	1.224	1.175	1.129	1.085	1.045	1.008	0.972	0.940	0.909
21	1.421	1.359	1.301	1.247	1.197	1.150	1.106	1.065	1.027	0.991	0.957	0.926
22	1.445	1.383	1.324	1.270	1.218	1.171	1.126	1.084	1.045	1.009	0.974	0.943
23	1.469	1.405	1.346	1.290	1.239	1.190	1.145	1.102	1.063	1.026	0.991	0.959
24	1.489	1.426	1.366	1.310	1.257	1.208	1.162	1.119	1.079	1.042	1.007	0.974
25	1.508	1.444	1.383	1.327	1.274	1.225	1.179	1.135	1.095	1.057	1.021	0.988
26	1.523	1.459	1.399	1.342	1.290	1.240	1.193	1.150	1.109	1.071	1.035	1.002
27	1.535	1.471	1.412	1.355	1.302	1.253	1.206	1.163	1.122	1.084	1.048	1.014
28	1.543	1.480	1.421	1.365	1.313	1.264	1.217	1.174	1.133	1.095	1.059	1.025
29	1.547	1.485	1.427	1.372	1.320	1.272	1.226	1.183	1.142	1.104	1.068	1.035
30	1.546	1.486	1.429	1.376	1.325	1.277	1.232	1.189	1.149	1.111	1.076	1.043
31	1.565	1.504	1.446	1.391	1.339	1.291	1.245	1.201	1.161	1.122	1.087	1.053
32	1.585	1.522	1.463	1.407	1.354	1.305	1.258	1.214	1.173	1.134	1.098	1.063

表 C.17 男性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	52	53	54	55	56	57	58	59	60	61	62	63
33	1.606	1.542	1.481	1.424	1.371	1.320	1.273	1.228	1.186	1.146	1.109	1.074
34	1.629	1.563	1.501	1.443	1.388	1.336	1.288	1.242	1.199	1.159	1.121	1.086
35	1.654	1.586	1.523	1.463	1.406	1.354	1.304	1.257	1.214	1.173	1.134	1.098
36	1.682	1.611	1.546	1.484	1.426	1.372	1.321	1.274	1.229	1.187	1.148	1.111
37	1.712	1.639	1.571	1.507	1.448	1.392	1.340	1.291	1.245	1.202	1.162	1.125
38	1.745	1.669	1.598	1.532	1.471	1.413	1.360	1.309	1.262	1.218	1.177	1.139
39	1.781	1.702	1.628	1.560	1.496	1.436	1.381	1.329	1.281	1.236	1.194	1.154
40	1.823	1.739	1.661	1.590	1.523	1.461	1.404	1.351	1.301	1.254	1.211	1.170
41	1.869	1.780	1.698	1.623	1.553	1.489	1.429	1.374	1.322	1.274	1.229	1.188
42	1.923	1.827	1.739	1.660	1.586	1.519	1.456	1.399	1.345	1.295	1.249	1.206
43	1.985	1.880	1.786	1.701	1.623	1.552	1.486	1.426	1.370	1.319	1.271	1.226
44	2.058	1.942	1.840	1.748	1.664	1.589	1.520	1.456	1.398	1.344	1.294	1.247
45	2.146	2.015	1.902	1.801	1.711	1.630	1.556	1.489	1.428	1.371	1.319	1.270
46	2.255	2.103	1.975	1.863	1.765	1.677	1.598	1.526	1.461	1.401	1.346	1.295
47	2.395	2.212	2.063	1.936	1.827	1.730	1.644	1.567	1.498	1.434	1.376	1.323
48	2.583	2.352	2.172	2.024	1.900	1.792	1.698	1.614	1.539	1.471	1.409	1.353
49	2.858	2.541	2.311	2.133	1.988	1.865	1.760	1.668	1.586	1.512	1.446	1.386
50	3.316	2.815	2.500	2.273	2.097	1.953	1.833	1.730	1.639	1.559	1.487	1.423
51	4.338	3.273	2.775	2.461	2.236	2.062	1.921	1.803	1.701	1.612	1.534	1.464
52	—	4.295	3.232	2.736	2.425	2.202	2.030	1.891	1.774	1.674	1.587	1.511
53	—	—	4.254	3.194	2.700	2.391	2.170	2.000	1.862	1.748	1.649	1.564
54	—	—	—	4.216	3.157	2.665	2.358	2.139	1.971	1.836	1.723	1.626
55	—	—	—	—	4.179	3.123	2.633	2.328	2.111	1.945	1.811	1.699
56	—	—	—	—	—	4.145	3.091	2.603	2.299	2.084	1.920	1.787
57	—	—	—	—	—	—	4.112	3.060	2.574	2.273	2.059	1.896
58	—	—	—	—	—	—	—	4.082	3.032	2.548	2.248	2.036
59	—	—	—	—	—	—	—	—	4.054	3.005	2.523	2.225
60+	—	—	—	—	—	—	—	—	—	4.027	2.980	2.499
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	64	65	66	67	68	69	70	71	72	73	74	75
15	0.792	0.768	0.746	0.724	0.704	0.685	0.667	0.650	0.634	0.619	0.605	0.591
16	0.810	0.786	0.762	0.741	0.720	0.701	0.682	0.665	0.649	0.633	0.619	0.605
17	0.828	0.803	0.779	0.757	0.736	0.716	0.697	0.680	0.663	0.647	0.633	0.619

表 C.17 男性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	64	65	66	67	68	69	70	71	72	73	74	75
18	0.846	0.820	0.795	0.773	0.751	0.731	0.712	0.694	0.677	0.661	0.646	0.632
19	0.863	0.837	0.812	0.788	0.767	0.746	0.727	0.708	0.691	0.675	0.660	0.646
20	0.880	0.853	0.828	0.804	0.782	0.761	0.741	0.723	0.705	0.689	0.673	0.659
21	0.897	0.869	0.843	0.819	0.796	0.775	0.755	0.736	0.719	0.702	0.687	0.672
22	0.913	0.885	0.858	0.834	0.811	0.789	0.769	0.750	0.732	0.715	0.700	0.685
23	0.928	0.900	0.873	0.848	0.825	0.803	0.783	0.763	0.745	0.728	0.712	0.697
24	0.943	0.914	0.887	0.862	0.839	0.816	0.796	0.776	0.758	0.741	0.725	0.710
25	0.957	0.928	0.901	0.875	0.852	0.829	0.808	0.789	0.770	0.753	0.737	0.722
26	0.970	0.941	0.914	0.888	0.864	0.841	0.820	0.801	0.782	0.765	0.749	0.734
27	0.983	0.953	0.926	0.900	0.876	0.853	0.832	0.812	0.794	0.776	0.760	0.745
28	0.994	0.964	0.937	0.911	0.886	0.864	0.843	0.823	0.804	0.787	0.771	0.756
29	1.003	0.974	0.946	0.921	0.896	0.874	0.853	0.833	0.814	0.797	0.781	0.766
30	1.012	0.982	0.955	0.929	0.905	0.883	0.862	0.842	0.824	0.807	0.791	0.776
31	1.021	0.992	0.964	0.938	0.913	0.891	0.869	0.849	0.831	0.813	0.797	0.782
32	1.031	1.001	0.973	0.947	0.922	0.899	0.877	0.857	0.838	0.820	0.804	0.788
33	1.042	1.011	0.983	0.956	0.931	0.907	0.885	0.865	0.845	0.828	0.811	0.795
34	1.053	1.022	0.993	0.965	0.940	0.916	0.894	0.873	0.853	0.835	0.818	0.802
35	1.064	1.033	1.003	0.975	0.949	0.925	0.902	0.881	0.861	0.843	0.826	0.809
36	1.077	1.044	1.014	0.986	0.959	0.935	0.912	0.890	0.870	0.851	0.833	0.817
37	1.089	1.056	1.026	0.997	0.970	0.945	0.921	0.899	0.879	0.859	0.841	0.825
38	1.103	1.069	1.038	1.008	0.981	0.955	0.931	0.909	0.888	0.868	0.850	0.833
39	1.117	1.083	1.051	1.021	0.993	0.966	0.942	0.919	0.897	0.877	0.859	0.841
40	1.133	1.097	1.064	1.033	1.005	0.978	0.953	0.929	0.907	0.887	0.868	0.850
41	1.149	1.112	1.079	1.047	1.018	0.990	0.964	0.940	0.918	0.897	0.877	0.859
42	1.166	1.129	1.094	1.061	1.031	1.003	0.976	0.952	0.929	0.907	0.888	0.869
43	1.184	1.146	1.110	1.077	1.045	1.016	0.989	0.964	0.940	0.919	0.898	0.879
44	1.204	1.164	1.127	1.093	1.061	1.031	1.003	0.977	0.953	0.930	0.909	0.889
45	1.226	1.184	1.146	1.110	1.077	1.046	1.017	0.990	0.966	0.942	0.921	0.900
46	1.249	1.206	1.166	1.129	1.094	1.062	1.032	1.005	0.979	0.955	0.933	0.912
47	1.274	1.229	1.187	1.148	1.113	1.079	1.049	1.020	0.993	0.969	0.946	0.924
48	1.301	1.254	1.210	1.170	1.133	1.098	1.066	1.036	1.009	0.983	0.959	0.937
49	1.331	1.281	1.235	1.193	1.154	1.118	1.084	1.054	1.025	0.998	0.974	0.951
50	1.364	1.311	1.263	1.218	1.177	1.139	1.104	1.072	1.042	1.014	0.989	0.965

表 C.17 男性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁											
	64	65	66	67	68	69	70	71	72	73	74	75
51	1.401	1.344	1.293	1.245	1.202	1.162	1.126	1.092	1.061	1.032	1.005	0.980
52	1.442	1.381	1.326	1.275	1.229	1.187	1.149	1.113	1.080	1.050	1.022	0.996
53	1.489	1.422	1.363	1.308	1.259	1.215	1.174	1.136	1.102	1.070	1.041	1.014
54	1.543	1.469	1.404	1.345	1.293	1.245	1.201	1.161	1.125	1.091	1.061	1.032
55	1.605	1.523	1.451	1.387	1.329	1.278	1.231	1.189	1.150	1.115	1.082	1.052
56	1.678	1.585	1.504	1.433	1.371	1.315	1.264	1.219	1.177	1.140	1.105	1.073
57	1.766	1.658	1.566	1.487	1.417	1.356	1.301	1.252	1.207	1.167	1.130	1.096
58	1.875	1.746	1.639	1.549	1.471	1.403	1.342	1.289	1.241	1.197	1.158	1.122
59	2.015	1.855	1.727	1.622	1.533	1.456	1.389	1.330	1.277	1.230	1.188	1.149
60+	2.203	1.994	1.836	1.710	1.606	1.518	1.443	1.377	1.319	1.267	1.221	1.179
受照年龄 (<i>e</i>) 岁	患癌年龄 (<i>e+t</i>) 岁											
	76	77	78	79	80	81	82	83	84+			
15	0.579	0.566	0.555	0.544	0.533	0.523	0.514	0.505	0.496			
16	0.592	0.580	0.568	0.557	0.546	0.536	0.527	0.518	0.509			
17	0.605	0.593	0.581	0.570	0.559	0.549	0.539	0.530	0.522			
18	0.619	0.606	0.594	0.583	0.572	0.562	0.552	0.543	0.534			
19	0.632	0.619	0.607	0.596	0.585	0.574	0.565	0.556	0.547			
20	0.645	0.632	0.620	0.608	0.597	0.587	0.577	0.568	0.560			
21	0.658	0.645	0.633	0.621	0.610	0.600	0.590	0.581	0.572			
22	0.671	0.658	0.645	0.634	0.623	0.612	0.603	0.594	0.585			
23	0.683	0.670	0.658	0.646	0.635	0.625	0.615	0.606	0.598			
24	0.696	0.682	0.670	0.658	0.647	0.637	0.628	0.619	0.610			
25	0.708	0.694	0.682	0.670	0.659	0.649	0.640	0.631	0.623			
26	0.719	0.706	0.694	0.682	0.671	0.661	0.652	0.643	0.635			
27	0.731	0.717	0.705	0.694	0.683	0.673	0.664	0.655	0.647			
28	0.742	0.728	0.716	0.705	0.694	0.684	0.675	0.667	0.660			
29	0.752	0.739	0.727	0.716	0.705	0.696	0.687	0.679	0.671			
30	0.762	0.749	0.737	0.726	0.716	0.706	0.698	0.690	0.683			
31	0.768	0.755	0.743	0.731	0.721	0.712	0.703	0.695	0.688			
32	0.774	0.761	0.749	0.737	0.727	0.717	0.708	0.700	0.693			
33	0.781	0.767	0.755	0.743	0.732	0.723	0.714	0.705	0.698			
34	0.787	0.774	0.761	0.749	0.738	0.728	0.719	0.711	0.703			
35	0.794	0.780	0.768	0.756	0.744	0.734	0.725	0.716	0.708			

表 C.17 男性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁								
	76	77	78	79	80	81	82	83	84+
36	0.802	0.787	0.774	0.762	0.751	0.740	0.731	0.722	0.714
37	0.809	0.795	0.781	0.769	0.757	0.747	0.737	0.728	0.720
38	0.817	0.802	0.788	0.776	0.764	0.753	0.743	0.734	0.726
39	0.825	0.810	0.796	0.783	0.771	0.760	0.750	0.740	0.732
40	0.834	0.818	0.804	0.790	0.778	0.767	0.756	0.747	0.738
41	0.842	0.827	0.812	0.798	0.786	0.774	0.763	0.753	0.745
42	0.852	0.835	0.820	0.806	0.793	0.782	0.771	0.760	0.751
43	0.861	0.845	0.829	0.815	0.802	0.789	0.778	0.768	0.758
44	0.871	0.854	0.838	0.824	0.810	0.797	0.786	0.775	0.766
45	0.882	0.864	0.848	0.833	0.819	0.806	0.794	0.783	0.773
46	0.893	0.875	0.858	0.842	0.828	0.815	0.802	0.791	0.781
47	0.904	0.886	0.868	0.852	0.838	0.824	0.811	0.800	0.789
48	0.916	0.897	0.879	0.863	0.848	0.833	0.820	0.808	0.797
49	0.929	0.909	0.891	0.874	0.858	0.844	0.830	0.818	0.806
50	0.943	0.922	0.903	0.886	0.869	0.854	0.840	0.827	0.815
51	0.957	0.936	0.916	0.898	0.881	0.865	0.851	0.837	0.825
52	0.972	0.950	0.930	0.911	0.893	0.877	0.862	0.848	0.835
53	0.989	0.965	0.944	0.924	0.906	0.889	0.873	0.859	0.845
54	1.006	0.982	0.959	0.938	0.919	0.902	0.885	0.870	0.857
55	1.024	0.999	0.975	0.954	0.934	0.915	0.898	0.882	0.868
56	1.044	1.017	0.993	0.970	0.949	0.930	0.912	0.895	0.880
57	1.066	1.037	1.011	0.987	0.965	0.945	0.926	0.909	0.893
58	1.089	1.059	1.031	1.006	0.982	0.961	0.941	0.923	0.907
59	1.114	1.082	1.052	1.026	1.001	0.978	0.958	0.938	0.921
60+	1.141	1.107	1.076	1.047	1.021	0.997	0.975	0.955	0.936

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 ERR_{16y} 值见表C.18。

表 C.18 女性除慢淋以外白血病 ERR_{16y} 值

受照年龄 岁 (e)	患癌年龄 ($e+t$) 岁											
	16	17	18	19	20	21	22	23	24	25	26	27
15	67.422	32.637	21.456	15.972	12.717	10.561	9.024	7.871	6.971	6.248	5.653	5.152
16	—	57.111	28.549	19.125	14.425	11.601	9.712	8.353	7.326	6.520	5.868	5.327
17	—	—	48.356	24.963	17.039	13.022	10.578	8.926	7.729	6.816	6.095	5.507
18	—	—	—	40.923	21.816	15.174	11.750	9.641	8.200	7.147	6.338	5.693
19	—	—	—	—	34.613	19.056	13.505	10.596	8.781	7.528	6.604	5.889
20	—	—	—	—	—	29.259	16.635	12.012	9.549	7.993	6.907	6.099
21	—	—	—	—	—	—	24.718	14.511	10.677	8.599	7.270	6.332
22	—	—	—	—	—	—	—	20.867	12.650	9.483	7.738	6.607
23	—	—	—	—	—	—	—	—	17.605	11.020	8.417	6.958
24	—	—	—	—	—	—	—	—	—	14.842	9.592	7.464
25	—	—	—	—	—	—	—	—	—	—	12.504	8.342
26	—	—	—	—	—	—	—	—	—	—	—	10.526
受照年龄 岁 (e)	患癌年龄 ($e+t$) 岁											
	28	29	30	31	32	33	34	35	36	37	38	39
15	4.725	4.356	4.033	3.747	3.492	3.264	3.058	2.872	2.701	2.546	2.403	2.272
16	4.871	4.480	4.140	3.842	3.577	3.341	3.128	2.935	2.760	2.601	2.454	2.320
17	5.018	4.603	4.246	3.933	3.658	3.413	3.194	2.996	2.816	2.652	2.502	2.365
18	5.166	4.724	4.347	4.021	3.735	3.481	3.255	3.051	2.867	2.700	2.547	2.407
19	5.315	4.842	4.444	4.102	3.805	3.543	3.311	3.102	2.914	2.743	2.587	2.445
20	5.468	4.959	4.536	4.178	3.869	3.599	3.360	3.147	2.955	2.781	2.623	2.478
21	5.628	5.074	4.623	4.246	3.925	3.646	3.401	3.184	2.989	2.813	2.652	2.506
22	5.801	5.190	4.704	4.306	3.972	3.684	3.434	3.212	3.015	2.837	2.676	2.528
23	6.001	5.310	4.781	4.358	4.008	3.712	3.456	3.231	3.032	2.853	2.691	2.544
24	6.252	5.445	4.857	4.402	4.034	3.728	3.467	3.239	3.039	2.859	2.698	2.551
25	6.614	5.612	4.937	4.438	4.049	3.731	3.465	3.235	3.034	2.855	2.695	2.550
26	7.250	5.855	5.034	4.472	4.053	3.721	3.448	3.217	3.017	2.840	2.681	2.538
27	8.855	6.295	5.180	4.511	4.047	3.697	3.417	3.184	2.985	2.811	2.656	2.516
28	—	7.444	5.462	4.578	4.039	3.660	3.370	3.135	2.938	2.767	2.617	2.482
29	—	—	6.253	4.735	4.043	3.614	3.307	3.069	2.874	2.708	2.564	2.435
30	—	—	—	5.250	4.102	3.567	3.230	2.985	2.793	2.633	2.495	2.373

表 C.18 女性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	28	29	30	31	32	33	34	35	36	37	38	39
31	—	—	—	—	5.217	4.067	3.530	3.191	2.945	2.752	2.591	2.453
32	—	—	—	—	—	5.181	4.029	3.491	3.151	2.904	2.710	2.549
33	—	—	—	—	—	—	5.144	3.990	3.451	3.110	2.862	2.668
34	—	—	—	—	—	—	—	5.105	3.950	3.409	3.068	2.820
35	—	—	—	—	—	—	—	—	5.065	3.909	3.368	3.026
36	—	—	—	—	—	—	—	—	—	5.023	3.867	3.326
37	—	—	—	—	—	—	—	—	—	—	4.982	3.825
38	—	—	—	—	—	—	—	—	—	—	—	4.940
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	40	41	42	43	44	45	46	47	48	49	50	51
15	2.152	2.040	1.937	1.841	1.753	1.670	1.594	1.522	1.456	1.394	1.336	1.282
16	2.196	2.082	1.976	1.878	1.788	1.704	1.625	1.552	1.485	1.421	1.362	1.307
17	2.238	2.122	2.014	1.914	1.821	1.735	1.656	1.581	1.512	1.448	1.387	1.331
18	2.278	2.159	2.049	1.947	1.853	1.766	1.684	1.609	1.538	1.473	1.411	1.354
19	2.313	2.193	2.081	1.978	1.882	1.794	1.711	1.634	1.563	1.496	1.434	1.376
20	2.345	2.223	2.110	2.006	1.909	1.819	1.735	1.658	1.585	1.518	1.455	1.396
21	2.372	2.249	2.135	2.030	1.932	1.842	1.757	1.679	1.606	1.538	1.474	1.415
22	2.394	2.270	2.156	2.050	1.952	1.861	1.776	1.697	1.624	1.555	1.491	1.432
23	2.409	2.285	2.171	2.065	1.967	1.876	1.791	1.712	1.639	1.570	1.506	1.446
24	2.417	2.294	2.180	2.075	1.978	1.887	1.803	1.724	1.651	1.582	1.518	1.458
25	2.417	2.295	2.183	2.079	1.983	1.893	1.810	1.732	1.659	1.591	1.527	1.468
26	2.408	2.289	2.178	2.077	1.982	1.894	1.812	1.735	1.663	1.596	1.533	1.474
27	2.389	2.273	2.166	2.066	1.974	1.888	1.808	1.733	1.663	1.597	1.535	1.477
28	2.359	2.247	2.144	2.048	1.959	1.876	1.798	1.726	1.657	1.593	1.533	1.476
29	2.318	2.211	2.113	2.021	1.936	1.857	1.782	1.712	1.646	1.584	1.526	1.471
30	2.263	2.163	2.071	1.985	1.905	1.830	1.759	1.692	1.630	1.570	1.514	1.462
31	2.331	2.222	2.122	2.030	1.945	1.866	1.792	1.722	1.657	1.596	1.538	1.483
32	2.411	2.289	2.180	2.081	1.990	1.906	1.828	1.755	1.687	1.623	1.563	1.506
33	2.507	2.369	2.248	2.139	2.041	1.951	1.868	1.791	1.720	1.653	1.590	1.532
34	2.626	2.465	2.328	2.207	2.099	2.002	1.913	1.831	1.756	1.686	1.620	1.559
35	2.778	2.584	2.424	2.287	2.167	2.060	1.964	1.876	1.796	1.722	1.653	1.589
36	2.984	2.736	2.542	2.383	2.247	2.128	2.022	1.927	1.841	1.762	1.689	1.622
37	3.284	2.942	2.695	2.502	2.343	2.208	2.090	1.986	1.892	1.807	1.729	1.658

表 C.18 女性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	40	41	42	43	44	45	46	47	48	49	50	51
38	3.783	3.242	2.900	2.654	2.462	2.304	2.170	2.053	1.950	1.858	1.774	1.698
39	4.898	3.741	3.200	2.860	2.614	2.423	2.266	2.133	2.018	1.916	1.825	1.743
40	—	4.856	3.700	3.159	2.820	2.575	2.385	2.229	2.098	1.984	1.883	1.794
41	—	—	4.814	3.659	3.119	2.781	2.537	2.348	2.194	2.064	1.951	1.852
42	—	—	—	4.773	3.619	3.080	2.743	2.500	2.313	2.160	2.031	1.920
43	—	—	—	—	4.733	3.580	3.043	2.706	2.465	2.278	2.127	2.000
44	—	—	—	—	—	4.694	3.542	3.006	2.671	2.431	2.246	2.096
45	—	—	—	—	—	—	4.656	3.505	2.970	2.637	2.398	2.215
46	—	—	—	—	—	—	—	4.620	3.470	2.936	2.604	2.367
47	—	—	—	—	—	—	—	—	4.584	3.436	2.904	2.573
48	—	—	—	—	—	—	—	—	—	4.550	3.403	2.872
49	—	—	—	—	—	—	—	—	—	—	4.518	3.372
50	—	—	—	—	—	—	—	—	—	—	—	4.486
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	52	53	54	55	56	57	58	59	60	61	62	63
15	1.232	1.185	1.141	1.099	1.061	1.024	0.990	0.958	0.928	0.900	0.873	0.848
16	1.256	1.208	1.163	1.120	1.081	1.044	1.009	0.977	0.946	0.917	0.890	0.864
17	1.279	1.230	1.184	1.141	1.101	1.063	1.028	0.994	0.963	0.934	0.906	0.880
18	1.301	1.251	1.204	1.161	1.120	1.081	1.045	1.012	0.980	0.950	0.922	0.896
19	1.322	1.271	1.224	1.179	1.138	1.099	1.062	1.028	0.996	0.966	0.937	0.911
20	1.341	1.290	1.242	1.197	1.155	1.116	1.079	1.044	1.012	0.981	0.952	0.925
21	1.359	1.308	1.259	1.214	1.171	1.131	1.094	1.059	1.026	0.995	0.966	0.939
22	1.376	1.324	1.275	1.229	1.186	1.146	1.108	1.073	1.040	1.009	0.980	0.952
23	1.390	1.338	1.289	1.243	1.200	1.159	1.121	1.086	1.053	1.021	0.992	0.964
24	1.402	1.350	1.301	1.255	1.211	1.171	1.133	1.097	1.064	1.033	1.003	0.976
25	1.412	1.360	1.311	1.265	1.222	1.181	1.143	1.108	1.074	1.043	1.014	0.986
26	1.419	1.367	1.318	1.273	1.230	1.190	1.152	1.116	1.083	1.052	1.023	0.995
27	1.422	1.371	1.323	1.278	1.236	1.196	1.159	1.123	1.090	1.059	1.030	1.003
28	1.423	1.372	1.325	1.281	1.239	1.200	1.163	1.129	1.096	1.065	1.036	1.009
29	1.419	1.370	1.324	1.281	1.240	1.202	1.166	1.132	1.100	1.069	1.041	1.014
30	1.412	1.364	1.320	1.278	1.238	1.201	1.166	1.132	1.101	1.072	1.044	1.018
31	1.432	1.383	1.338	1.295	1.254	1.216	1.180	1.146	1.114	1.084	1.055	1.029
32	1.453	1.403	1.356	1.312	1.271	1.231	1.194	1.160	1.127	1.096	1.067	1.040

表 C.18 女性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	52	53	54	55	56	57	58	59	60	61	62	63
33	1.477	1.425	1.377	1.331	1.288	1.248	1.210	1.174	1.141	1.110	1.080	1.052
34	1.502	1.448	1.398	1.351	1.307	1.266	1.227	1.190	1.156	1.124	1.093	1.065
35	1.529	1.474	1.422	1.373	1.327	1.284	1.244	1.207	1.171	1.138	1.107	1.078
36	1.559	1.501	1.447	1.396	1.349	1.305	1.263	1.224	1.188	1.154	1.122	1.092
37	1.592	1.531	1.474	1.421	1.372	1.326	1.283	1.243	1.206	1.171	1.138	1.107
38	1.628	1.564	1.504	1.449	1.397	1.350	1.305	1.263	1.225	1.188	1.154	1.123
39	1.668	1.600	1.537	1.479	1.425	1.375	1.328	1.285	1.245	1.207	1.172	1.139
40	1.713	1.640	1.573	1.511	1.455	1.402	1.354	1.308	1.266	1.227	1.191	1.157
41	1.764	1.685	1.613	1.547	1.487	1.432	1.381	1.334	1.290	1.249	1.211	1.176
42	1.822	1.736	1.658	1.588	1.523	1.465	1.411	1.361	1.315	1.272	1.233	1.196
43	1.890	1.794	1.709	1.633	1.564	1.501	1.443	1.391	1.342	1.297	1.256	1.217
44	1.970	1.862	1.767	1.684	1.609	1.541	1.480	1.424	1.372	1.325	1.281	1.241
45	2.066	1.942	1.835	1.742	1.660	1.586	1.520	1.460	1.405	1.355	1.309	1.266
46	2.185	2.038	1.915	1.810	1.718	1.637	1.565	1.500	1.441	1.387	1.338	1.293
47	2.337	2.157	2.011	1.889	1.786	1.695	1.616	1.545	1.481	1.424	1.371	1.323
48	2.543	2.309	2.130	1.985	1.865	1.763	1.674	1.596	1.526	1.464	1.407	1.356
49	2.843	2.515	2.282	2.104	1.961	1.843	1.742	1.654	1.577	1.509	1.447	1.392
50	3.342	2.814	2.488	2.257	2.080	1.939	1.822	1.722	1.635	1.560	1.492	1.432
51	4.457	3.314	2.787	2.462	2.233	2.058	1.918	1.802	1.703	1.618	1.543	1.477
52	—	4.428	3.287	2.762	2.438	2.210	2.036	1.898	1.783	1.686	1.602	1.528
53	—	—	4.401	3.261	2.738	2.416	2.189	2.017	1.879	1.765	1.669	1.587
54	—	—	—	4.376	3.237	2.715	2.394	2.169	1.998	1.862	1.749	1.654
55	—	—	—	—	4.352	3.215	2.694	2.375	2.150	1.980	1.845	1.734
56	—	—	—	—	—	4.329	3.194	2.674	2.356	2.133	1.964	1.830
57	—	—	—	—	—	—	4.308	3.174	2.656	2.338	2.116	1.949
58	—	—	—	—	—	—	—	4.288	3.155	2.638	2.322	2.101
59	—	—	—	—	—	—	—	—	4.270	3.138	2.622	2.307
60+	—	—	—	—	—	—	—	—	—	4.252	3.121	2.607
受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	64	65	66	67	68	69	70	71	72	73	74	75
15	0.824	0.801	0.780	0.760	0.741	0.723	0.706	0.690	0.674	0.660	0.646	0.632
16	0.840	0.817	0.796	0.775	0.756	0.738	0.720	0.704	0.688	0.673	0.659	0.646
17	0.856	0.832	0.811	0.790	0.770	0.752	0.734	0.718	0.702	0.687	0.673	0.659

表 C.18 女性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁											
	64	65	66	67	68	69	70	71	72	73	74	75
18	0.871	0.847	0.825	0.804	0.785	0.766	0.748	0.731	0.716	0.701	0.686	0.673
19	0.886	0.862	0.839	0.818	0.798	0.780	0.762	0.745	0.729	0.714	0.699	0.686
20	0.900	0.876	0.853	0.832	0.812	0.793	0.775	0.758	0.742	0.727	0.712	0.699
21	0.913	0.889	0.866	0.845	0.825	0.806	0.788	0.771	0.754	0.739	0.725	0.711
22	0.926	0.902	0.879	0.857	0.837	0.818	0.800	0.783	0.767	0.751	0.737	0.723
23	0.938	0.914	0.891	0.869	0.849	0.830	0.812	0.795	0.778	0.763	0.749	0.735
24	0.950	0.925	0.902	0.880	0.860	0.841	0.823	0.806	0.790	0.775	0.760	0.747
25	0.960	0.935	0.912	0.891	0.871	0.851	0.833	0.816	0.800	0.785	0.771	0.758
26	0.969	0.945	0.922	0.900	0.880	0.861	0.843	0.826	0.810	0.796	0.782	0.768
27	0.977	0.953	0.930	0.909	0.889	0.870	0.852	0.836	0.820	0.805	0.791	0.778
28	0.984	0.960	0.938	0.916	0.897	0.878	0.860	0.844	0.829	0.814	0.800	0.788
29	0.989	0.966	0.944	0.923	0.903	0.885	0.868	0.852	0.836	0.822	0.809	0.797
30	0.993	0.970	0.948	0.928	0.909	0.891	0.874	0.858	0.843	0.830	0.817	0.805
31	1.004	0.980	0.958	0.937	0.918	0.899	0.882	0.866	0.851	0.837	0.824	0.811
32	1.015	0.991	0.968	0.947	0.927	0.908	0.891	0.874	0.859	0.845	0.831	0.819
33	1.026	1.001	0.978	0.957	0.936	0.917	0.900	0.883	0.867	0.852	0.839	0.826
34	1.038	1.013	0.989	0.967	0.946	0.927	0.909	0.892	0.876	0.861	0.847	0.834
35	1.051	1.025	1.001	0.978	0.957	0.937	0.918	0.901	0.884	0.869	0.855	0.841
36	1.064	1.038	1.013	0.990	0.968	0.947	0.928	0.910	0.894	0.878	0.863	0.850
37	1.078	1.051	1.025	1.002	0.979	0.958	0.939	0.920	0.903	0.887	0.872	0.858
38	1.093	1.065	1.039	1.014	0.991	0.970	0.950	0.931	0.913	0.897	0.881	0.867
39	1.108	1.080	1.053	1.028	1.004	0.982	0.961	0.942	0.924	0.907	0.891	0.876
40	1.125	1.095	1.068	1.042	1.017	0.995	0.973	0.953	0.935	0.917	0.901	0.886
41	1.143	1.112	1.083	1.056	1.031	1.008	0.986	0.965	0.946	0.928	0.911	0.896
42	1.162	1.130	1.100	1.072	1.046	1.022	0.999	0.978	0.958	0.940	0.922	0.906
43	1.182	1.148	1.118	1.089	1.062	1.037	1.013	0.991	0.971	0.952	0.934	0.917
44	1.203	1.169	1.136	1.106	1.078	1.052	1.028	1.005	0.984	0.964	0.946	0.929
45	1.227	1.190	1.157	1.125	1.096	1.069	1.044	1.020	0.998	0.978	0.958	0.941
46	1.252	1.214	1.178	1.145	1.115	1.087	1.060	1.036	1.013	0.992	0.972	0.953
47	1.279	1.239	1.202	1.167	1.135	1.105	1.078	1.052	1.029	1.006	0.986	0.967
48	1.309	1.266	1.227	1.190	1.157	1.126	1.097	1.070	1.045	1.022	1.001	0.981
49	1.342	1.296	1.254	1.216	1.180	1.147	1.117	1.089	1.063	1.039	1.016	0.995
50	1.378	1.329	1.284	1.243	1.205	1.171	1.139	1.109	1.082	1.056	1.033	1.011

表 C.18 女性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	64	65	66	67	68	69	70	71	72	73	74	75
51	1.418	1.365	1.317	1.273	1.233	1.196	1.162	1.131	1.102	1.075	1.051	1.028
52	1.463	1.405	1.353	1.305	1.262	1.223	1.187	1.154	1.124	1.095	1.069	1.045
53	1.514	1.450	1.393	1.342	1.295	1.253	1.214	1.179	1.147	1.117	1.090	1.064
54	1.572	1.501	1.438	1.382	1.331	1.286	1.244	1.207	1.172	1.140	1.111	1.084
55	1.640	1.559	1.489	1.427	1.371	1.322	1.277	1.236	1.199	1.166	1.135	1.106
56	1.720	1.627	1.547	1.478	1.417	1.362	1.313	1.269	1.229	1.193	1.160	1.129
57	1.816	1.707	1.615	1.536	1.467	1.407	1.353	1.305	1.262	1.223	1.187	1.155
58	1.935	1.803	1.695	1.604	1.526	1.458	1.398	1.345	1.298	1.255	1.217	1.182
59	2.087	1.922	1.791	1.684	1.593	1.516	1.449	1.390	1.338	1.292	1.250	1.212
60+	2.293	2.074	1.910	1.780	1.673	1.584	1.508	1.441	1.383	1.332	1.286	1.244
受照年龄 (e) 岁	患癌年龄 (e+t) 岁											
	76	77	78	79	80	81	82	83	84+			
15	0.620	0.608	0.596	0.585	0.575	0.565	0.555	0.546	0.538			
16	0.633	0.621	0.609	0.599	0.588	0.578	0.569	0.560	0.551			
17	0.647	0.634	0.623	0.612	0.601	0.591	0.582	0.573	0.564			
18	0.660	0.648	0.636	0.625	0.615	0.605	0.595	0.586	0.578			
19	0.673	0.661	0.649	0.638	0.628	0.618	0.608	0.600	0.591			
20	0.686	0.674	0.662	0.651	0.641	0.631	0.622	0.613	0.605			
21	0.698	0.686	0.675	0.664	0.653	0.644	0.635	0.626	0.618			
22	0.711	0.698	0.687	0.676	0.666	0.656	0.647	0.639	0.631			
23	0.723	0.710	0.699	0.688	0.678	0.669	0.660	0.652	0.644			
24	0.734	0.722	0.711	0.700	0.691	0.681	0.673	0.665	0.657			
25	0.745	0.734	0.722	0.712	0.702	0.693	0.685	0.677	0.670			
26	0.756	0.744	0.734	0.723	0.714	0.705	0.697	0.690	0.683			
27	0.766	0.755	0.744	0.734	0.725	0.717	0.709	0.702	0.695			
28	0.776	0.765	0.755	0.745	0.736	0.728	0.721	0.714	0.708			
29	0.785	0.774	0.764	0.755	0.747	0.739	0.732	0.725	0.720			
30	0.793	0.783	0.773	0.765	0.756	0.749	0.743	0.737	0.732			
31	0.800	0.789	0.780	0.771	0.762	0.755	0.748	0.742	0.737			
32	0.807	0.796	0.786	0.777	0.768	0.761	0.754	0.748	0.742			
33	0.814	0.803	0.793	0.783	0.775	0.767	0.760	0.753	0.748			
34	0.821	0.810	0.800	0.790	0.781	0.773	0.766	0.759	0.753			
35	0.829	0.817	0.807	0.797	0.788	0.779	0.772	0.765	0.759			

表 C.18 女性除慢淋以外白血病 ERR_{16y} 值 (续)

受照年龄 (e) 岁	患癌年龄 ($e+t$) 岁								
	76	77	78	79	80	81	82	83	84+
36	0.837	0.825	0.814	0.804	0.795	0.786	0.778	0.771	0.765
37	0.845	0.833	0.822	0.811	0.802	0.793	0.785	0.778	0.772
38	0.854	0.841	0.830	0.819	0.809	0.800	0.792	0.785	0.778
39	0.862	0.850	0.838	0.827	0.817	0.807	0.799	0.791	0.785
40	0.872	0.858	0.846	0.835	0.825	0.815	0.806	0.799	0.792
41	0.881	0.868	0.855	0.843	0.833	0.823	0.814	0.806	0.799
42	0.891	0.877	0.864	0.852	0.841	0.831	0.822	0.813	0.806
43	0.902	0.887	0.874	0.862	0.850	0.840	0.830	0.821	0.814
44	0.913	0.898	0.884	0.871	0.859	0.848	0.839	0.830	0.822
45	0.924	0.909	0.894	0.881	0.869	0.858	0.847	0.838	0.830
46	0.936	0.920	0.905	0.892	0.879	0.867	0.857	0.847	0.838
47	0.949	0.932	0.917	0.903	0.889	0.877	0.866	0.856	0.847
48	0.962	0.945	0.929	0.914	0.900	0.888	0.876	0.866	0.856
49	0.976	0.958	0.941	0.926	0.912	0.899	0.887	0.876	0.866
50	0.991	0.972	0.955	0.939	0.924	0.910	0.898	0.886	0.876
51	1.007	0.987	0.969	0.952	0.936	0.922	0.909	0.897	0.886
52	1.023	1.003	0.984	0.966	0.950	0.935	0.921	0.909	0.897
53	1.041	1.019	0.999	0.981	0.964	0.948	0.934	0.921	0.909
54	1.060	1.037	1.016	0.996	0.979	0.962	0.947	0.933	0.921
55	1.080	1.056	1.033	1.013	0.994	0.977	0.961	0.947	0.933
56	1.101	1.076	1.052	1.031	1.011	0.993	0.976	0.961	0.947
57	1.125	1.098	1.073	1.050	1.028	1.009	0.991	0.975	0.961
58	1.150	1.121	1.094	1.070	1.047	1.027	1.008	0.991	0.976
59	1.177	1.146	1.117	1.091	1.068	1.046	1.026	1.008	0.991
60+	1.207	1.173	1.143	1.115	1.089	1.066	1.045	1.025	1.008

附录 D
(规范性)
氡致肺癌超额相对危险的计算

对吸烟者，氡致肺癌超额相对危险 95%上限用公式 (D. 1) 计算：

$$ERR_{95\%, \text{吸烟}} = WLM^{0.82} \times ERR_{1WLM, 95\%, \text{吸烟}} \times T_t \dots\dots\dots (D. 1)$$

式中：

- $ERR_{95\%, \text{吸烟}}$ ——吸烟者的超额相对危险95%上限；
- 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；
- $ERR_{1WLM, 95\%, \text{吸烟}}$ ——每1 WLM 氡子体照射超额相对危险系数95%的上限，由表D. 1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；
- T_t ——潜伏期校正因子，见本标准附录F。

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

$$ERR_{95\%, \text{不吸烟}} = WLM^{0.82} \times ERR_{1WLM, 95\%, \text{吸烟}} \times T_t \times 3.8 \dots\dots\dots (D. 2)$$

式中：

- $ERR_{95\%, \text{不吸烟}}$ ——不吸烟者的超额相对危险 95%上限；
- 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；
- $ERR_{1WLM, 95\%, \text{吸烟}}$ ——每1 WLM 氡子体照射超额相对危险系数95%的上限，由表D. 1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；
- T_t ——潜伏期校正因子，见本标准附录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 有吸烟史的氢致肺癌 ERR_{1/MLM, 95%, 吸烟}

年龄 (a) 岁	暴露后经历的时间 (t) 年										
	≤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.1 有吸烟史的氡致肺癌 $ERR_{1/MLM, 95\%, \text{吸烟}}$ (续)

年龄 (a) 岁	暴露后经历的时间 (t) 年									
	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

注：引自 NIH-N-03-5387, P30。

附录 E
(规范性)
外照射致肺癌吸烟校正因子

外照射致肺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
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
合计	1.00	1.00
注：引自NIH-N-03-5387, P69。		

附录 F
(规范性)
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

潜伏时间 (t) 年	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	1
7	0.342	0.971	1
8	0.658	0.995	1
9	0.878	0.999	1
10	0.964	1	1
11	0.990	1	1
12	0.997	1	1
13	0.999	1	1
≥ 14	1	1	1
注：引自NIH-N-03-5387, P95-96。			

附录 G
(规范性)
病因概率的 95%可信限上限估算

G.1 病因概率的 95%可信限上限计算公式

病因概率的 95%可信限上限的计算见公式 (G.1)。

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

式中:

$PC_{95\%, U}$ —— PC 的 95%可信限上限值;

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;

e —— 自然对数的底数。

校正后的病因概率的 95%可信限上限见公式 (G.2)。

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

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 各种癌症的综合不确定性和偏倚校正系数

各种癌症的综合不确定性 (S) 和偏倚校正系数 (V) 见表 G.1。

表G.1 各种癌症的综合不确定性 (S) 和偏倚校正系数 (V)

癌症种类	照射后时间 年	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
急性或慢粒白血病	任何时间	1.61	1.62
其他所有白血病 (除外慢性淋巴细胞白血病)	任何时间	1.59	1.62

表G.1 (续)

癌症种类	照射后时间 年	综合不确定性 (S)	偏倚校正系数 (V)
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
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
骨和关节恶性肿瘤	任何时间	1.57	1.00
注：引自 NIH (1985) 表VII-7。			

附录 H
(资料性)
放射致癌病因概率计算示例

H.1 放射致癌病因概率计算示例 1

某男, 32 岁患白血病, 25 岁~30 岁期间, 因职业照射, 每年均匀照射致红骨髓剂量 0.05Gy, 累积剂量为 0.3Gy。列表计算职业照射病因概率值的 95% 的上限值为 119.61%。具体计算用参数及过程见表 H.1。

表 H.1 男性白血病职业照射 PC 计算表 (例 1)

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	T 年	T_t	$ERR_{校正}$	$ERR_{合计校正}$	PC %	$PC_{95\%上限}$ %
25	4.519	0.05	0.052	7	1	0.236	1.216	54.87	119.61
26	4.516	0.05	0.052	6	1	0.236			
27	4.495	0.05	0.052	5	0.999	0.234			
28	4.460	0.05	0.052	4	0.987	0.230			
29	4.421	0.05	0.052	3	0.866	0.200			
30	4.414	0.05	0.052	2	0.35	0.081			
注1: 查询 ERR_{1Gy} , 见本标准表 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 , 见本标准表 F.1。 注4: $ERR_{校正}=ERR\times F(D)\times T$ 。 注5: $PC=ERR_{合计校正}/(ERR_{合计校正}+1)\times 100\%$ 。									

本标准: $PC = ERR / (ERR+1)$

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

$F(D)=D \times (1+0.87 \times D)$; 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示例 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 31.09%。具体计算用参数及过程见表 H.2。

表 H.2 男性甲状腺癌职业照射 PC 计算表 (例 2)

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	T 年	T_t	剂量及剂量 率范围	$DDREF$	$ERR_{\text{合计校正}}$	PC %	$PC_{95\% \text{ 上限}}$ %
25	0.803	0.25	0.25	8	0.995	高	1	0.20	16.67	31.09
注 1: 查询 ERR_{1Gy} , 见本标准表 C.16 甲状腺癌男性列。 注 2: $F(D)=D$ 。 注 3: t =诊断年龄-受照年龄。 注 4: 查询 T_t , 见本标准表 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: $ERR_{\text{校正}}=ERR \times D \times T / DDREF$ 。 注 8: $PC=ERR_{\text{合计校正}} / (ERR_{\text{合计校正}}+1) \times 100\%$ 。										

本标准： $PC = ERR / (ERR + 1)$

$ERR = D \times ERR \times T / DDREF$

ERR为受照年龄-患癌年龄-性别别危险系数；

$T = 0.000676, 0.00409, 0.0243, 0.131, 0.477, 0.847, 0.971, 0.995, 0.999$ ($t = 1 \text{年} \sim 9 \text{年}$)。

H.3 放射致癌病因概率计算示例 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%。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92.10%。具体计算用参数及过程见表H.3。

表 H.3 氡致男性肺癌职业照射 PC 计算表（例 3）

受照年龄 岁	WLM	$WLM^{0.82}$	T 年	$ERR_{1WLM, 95\%, \text{吸烟}}$	T_t	$ERR_{95\%, \text{吸烟}}$	$ERR_{\text{合计校正}, 95\%, \text{吸烟}}$	$PC_{95\% \text{上限}}\%$
40	8.5	5.78	10	0.701	0.964	3.91	11.66	92.10
41	7.0	4.93	9	0.783	0.878	3.39		
42	7.2	5.05	8	0.874	0.658	2.90		
43	4.0	3.12	7	0.976	0.342	1.04		
44	4.0	3.12	6	1.09	0.122	0.41		
注1： $t = \text{诊断年龄} - \text{受照年龄}$ ；查询 $ERR_{1WLM, 95\%, \text{吸烟}}$ ，见本标准表 D.1。 注2：查询 T_t ，见本标准表 F.1。 注3： $ERR_{95\%, \text{吸烟}} = WLM^{0.82} \times ERR_{1WLM, 95\%, \text{吸烟}} \times T_t$ 。 注4： $PC_{95\% \text{上限}} = ERR_{\text{合计校正}, 95\%, \text{吸烟}} / (ERR_{\text{合计校正}, 95\%, \text{吸烟}} + 1)$ 。								

本标准： $PC = ERR / (ERR + 1)$

$ERR_{95\%, \text{吸烟}} = WLM^{0.82} \times ERR_{1WLM} \times T_t$

ERR_{1WLM} 为吸烟者的受照年龄-患癌年龄-性别别危险系数；

$T = 0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ ($t = 1 \text{年} \sim 12 \text{年}$)。

H.4 放射致癌病因概率计算示例 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34.41%。具体计算用参数及过程见表H.4。

表 H.4 女性胃癌职业照射 PC 计算表（例 4）

受照年龄 岁	ERR_{1Gy}	D Gy	F(D)	T 年	T_t	剂量及剂量率 范围	DDREF	$ERR_{\text{合计校正}}$	PC %	$PC_{95\% \text{上限}}\%$
25	1.350	0.1	0.1	25	1	低	1.5	0.090	8.26	34.41
注1：查询 ERR_{1Gy} ，见本标准表C.8 女性胃癌。 注2： $F(D) = D$ 。 注3： $t = \text{诊断年龄} - \text{受照年龄}$ 。 注4：查询 T_t ，见本标准表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： $PC = ERR_{\text{合计校正}} / (ERR_{\text{合计校正}} + 1) \times 100\%$ 。										

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;
 $T=0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ ($t=1\text{年}\sim 12\text{年}$)。

H.5 放射致癌病因概率计算示例 5

某女, 45岁患乳腺癌, 20岁因职业照射, 乳腺受照 0.1Gy。列表计算职业照射病因概率值的 95% 的上限值为 25.45%。具体计算用参数及过程见表 H.5。

表 H.5 女性乳腺癌职业照射 PC 计算表 (例 5)

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	T 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	PC %	$PC_{95\% \text{上限}}$ %
20	1.484	0.1	0.1	25	1	低	1.5	0.099	9.00	25.45
注1: 查询 ERR_{1Gy} , 见本标准表C.15女性乳腺癌。 注2: $F(D)=D$ 。 注3: t =诊断年龄-受照年龄。 注4: 查询 T_t , 见本标准表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: $PC=ERR_{\text{合计校正}} / (ERR_{\text{合计校正}}+1) \times 100\%$ 。										

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;

$T=0.000197, 0.000731, 0.00271, 0.01, 0.0362, 0.122, 0.342, 0.658, 0.878, 0.964, 0.99, 0.997$ ($t=1\text{年}\sim 12\text{年}$)。

H.6 放射致癌病因概率计算示例 6

男性 31 岁时, 肝脏受低 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 7.43%。具体计算用参数及过程见表 H.6。

表 H.6 男性肝癌职业照射 PC 计算表 (例 6)

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	T 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	PC %	$PC_{95\% \text{上限}}$ %
31	0.346	0.1	0.1	19	1	低	1.5	0.023	2.25	7.43
注1: 查询 ERR_{1Gy} , 见本标准表C.4 男性肝癌。 注2: $F(D)=D$ 。 注3: t =诊断年龄-受照年龄。 注4: 查询 T_t , 见本标准表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: $PC=ERR_{\text{合计校正}} / (ERR_{\text{合计校正}}+1) \times 100\%$ 。										

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示例 7

女性 35 岁时, 膀胱受低 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 41.30%。具体计算用参数及过程见表 H.7。

表 H.7 女性膀胱癌职业照射 PC 计算表 (例 7)

受照年龄 岁	ERR_{1Gy}	D Gy	$F(D)$	T 年	T_t	剂量及剂量率 范围	$DDREF$	$ERR_{\text{合计校正}}$	PC %	$PC_{95\% \text{上限}}$ %
35	1.972	0.1	0.1	20	1	低	1.5	0.131	11.62	41.30
注 1: 查询 ERR_{1Gy} , 见本标准表 C.12 女性膀胱癌。 注 2: $F(D)=D$ 。 注 3: t =诊断年龄-受照年龄。 注 4: 查询 T_t , 见本标准表 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: $PC=ERR_{\text{合计校正}} / (ERR_{\text{合计校正}}+1) \times 100\%$ 。										

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示例 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 145.74%。具体计算用参数及过程见表 H.8。

表 H.8 例 8 男性乳腺癌职业照射 PC 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	$DDREF$	$ERR_{\text{合计校正}}$	PC %	$PC_{95\% \text{上限}}$ %
45	45.531	0.1	0.1	10	0.964	低	1.5	2.926	74.53	145.74
注1: 查询 ERR_{1Gy} , 见本标准附录C表C.14男性乳腺癌。 注2: $F(D)=D$ 。 注3: t =诊断年龄-受照年龄。 注4: 查询 T_t , 见本标准表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: $PC=ERR_{\text{合计校正}} / (ERR_{\text{合计校正}}+1) \times 100\%$ 。										

H.9 放射致癌病因概率 95%可信限上限计算示例

放射致癌病因概率 95%可信限上限计算示例见表 H.9。此表不适用氡致肺癌，氡致肺癌相关计算详见本标准附录 D。

表 H.9 H.1~H.2 与 H.4~H.8 示例放射致癌 PC95%可信限上限计算表

例题	癌症病例	照后年数 年	S	V	G %	$S^{1.96}$	$PC_{95\%}$ %	$PC^{95\%, //}$ %
例 1	白血病	7	1.59	1.62	54.87	2.48	136.17	119.61
例 2	甲状腺癌	8	1.54	0.71	16.67	2.33	38.86	31.09
例 4	胃癌	25	1.74	1.62	8.26	2.96	24.46	34.41
例 5	乳腺癌	25	1.40	1.62	9.00	1.93	17.40	25.45
例 6	肝癌	19	1.84	1.00	2.25	3.30	7.43	7.43
例 7	膀胱癌	20	1.63	1.62	11.62	2.61	30.28	41.30
例 8	乳腺癌	10	1.46	1.15	74.53	2.10	156.48	145.74

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