CHAPTER 62

Genital Cancers, Females, 1940-1980

● Female Genital Cancers are the single cancer-group for which there is no apparent dose-response with PhysPop (Chapters 14 and 62). This finding may be accepted without challenge, or it may mean that that the Census Divisions are badly matched for an important carcinogenic co-actor which is specific for female Genital Cancers (discussion in Chapter 14). Although it will be important for female health (and for insights into radiation carcinogenesis) to establish which is the correct explanation, resolution of the issue is beyond the scope of this book.

● Until the issue is resolved, we strongly caution against a hasty belief that female genital tissues are invulnerable to radiation carcinogenesis. If such a belief is NOT true, the belief could result in a great deal of harm to female health.

● In Chapter 14, when we regressed the 1940 MortRates for female Genital Cancers on PhysPop, we found no detectable dose-response. Before we regress the 1950, 1960, 1970, and 1980 MortRates on the appropriate PhysPops (next page), we must examine Box 1 to learn whether or not we are obliged to adjust the MortRates.

● We see in Box 1 that the 1940 MortRates for female Genital Cancers are almost equal in all Trios, and decline thereafter almost equally in all Trios. There is very little separation in the 1940 MortRates among the Census Divisions, and very little separation in 1960, and very little separation in 1980. This finding is, of course, consistent with Table 14-A, which shows that the High5/Low4 Ratio hovers close to unity for the entire period. By contrast, the separation of Mean PhysPop values, by Census Divisions, persists quite well during the same period (Chapter 47, Part 3).

● Even though Box 1 (Column D) suggests a slight "Trio-Effect," the effect disappears in Box 2 (not shown), where we use population-weighted MortRates and "ppAdju" from Table 47-B. Box 2 produces no evidence that a carcinogenic co-actor which can contribute to female MortRates, from Genital Cancers, is operating more strongly in the LowTrio than in the TopTrio. Therefore, we make no adjustments before doing the post-1940 regressions (next page).

● Those regressions confirm that no dose-response develops after 1940 --- a result which could be predicted from Columns B and G of Box 1. No dose-response means no detectable Fractional Causation by medical radiation. Thus, there is no Table 62-A in this chapter.

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                                      Box 1, Chap. 62
             Genital Cancers, Females:  Post-1940 Change in MortRates by Census Trios

1960 vs. 1940, by Trios:  Col.D expresses change by ratios.  Col.F expresses change by subtraction.
1980 vs. 1940, by Trios:  Col.I expresses change by ratios.  Col.K expresses change by subtraction.
1940 MRs are almost equal in all Trios, and decline almost equally in all Trios by 1980.
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	Col.A 1940 MortRate Tab 14-A	Col.B 1960 MortRate Tab 14-A	Col.C Ratio Col.B /Col.A	Col.D Input from Col.C	Col.E Diff: Col.B minus A	Col.F Input from Col.E	Col.G 1980 MortRate Tab 14-A	Col.H Ratio Col.G /Col.A	Col.I Input from Col.H	Col.J Diff: Col.G minus A	Col.K Input from Col.J
Pacif	33.1	20.0	0.604	Avg Chg	-13.1	Avg Chg	13.3	0.402	Avg Chg	-19.8	Avg Chg
NewE	32.8	21.7	0.662	TopTrio	-11.1	TopTrio	13.4	0.409	TopTrio	-19.4	TopTrio
MidAtl	32.7	22.2	0.679	0.648	-10.5	-11.6	14.3	0.437	0.416	-18.4	-19.2
WNoCen	28.4	20.3	0.715	Avg Chg	-8.1	Avg Chg	13.3	0.468	Avg Chg	-15.1	Avg Chg
ENoCen	33.2	24.2	0.729	MidTrio	-9.0	MidTrio	14.5	0.437	MidTrio	-18.7	MidTrio
Mtn	27.8	18.4	0.662	0.702	-9.4	-8.8	11.7	0.421	0.442	-16.1	-16.6
WSoCen	30.0	22.1	0.737	Avg Chg	-7.9	Avg Chg	12.5	0.417	Avg Chg	-17.5	Avg Chg
ESoCen	33.2	24.7	0.744	LowTrio	-8.5	LowTrio	14.3	0.431	LowTrio	-18.9	LowTrio
SoAtl	32.5	24.0	0.738	0.740	-8.5	-8.3	13.5	0.415	0.421	-19.0	-18.5

● **Regression of Post-1940 MortRates on Mean PhysPops**

Below, the Mean PhysPops (x-values) come from Table 47-A, and the MortRates (y-values) from Table 14-A. Both are arranged in Trio-Sequence here.

	1940-50 Mean PP	1950 MortRate
Pacific	154.16	25.5
New England	162.03	25.1
Mid-Atlantic	169.24	27.2
West North Central	121.60	23.4
East North Central	128.53	28.3
Mountain	119.64	23.6
West South Central	102.64	27.4
East South Central	84.44	29.7
South Atlantic	99.91	29.9

Genital Cancers, Female:
Regression Output:

Constant	31.3346
Std Err of Y Est	2.3191
R Squared	0.1996
No. of Observations	9
Degrees of Freedom	7
X Coefficient(s)	-0.0367
Std Err of Coef.	0.0278
Coefficient / S.E.	-1.3213

Trio-Seq.	1940-60 Mean PP	1960 MortRate
Pacific	155.69	20.0
New England	162.81	21.7
Mid-Atlantic	167.04	22.2
West North Central	118.15	20.3
East North Central	123.87	24.2
Mountain	117.40	18.4
West South Central	102.31	22.1
East South Central	85.63	24.7
South Atlantic	101.72	24.0

Genital Cancers, Female:
Regression Output:

Constant	25.3185
Std Err of Y Est	2.1123
R Squared	0.1348
No. of Observations	9
Degrees of Freedom	7
X Coefficient(s)	-0.0267
Std Err of Coef.	0.0255
Coefficient / S.E.	-1.0445

Trio-Seq.	1940-70 Mean PP	1970 MortRate
Pacific	162.72	16.7
New England	168.74	17.6
Mid-Atlantic	173.28	18.3
West North Central	119.56	16.8
East North Central	124.70	19.4
Mountain	122.37	15.0
West South Central	105.03	17.3
East South Central	89.44	19.5
South Atlantic	108.97	18.8

Genital Cancers, Female:
Regression Output:

Constant	19.0584
Std Err of Y Est	1.5206
R Squared	0.0461
No. of Observations	9
Degrees of Freedom	7
X Coefficient(s)	-0.0103
Std Err of Coef.	0.0177
Coefficient / S.E.	-0.5819

Trio-Seq.	1940-80 Mean PP	1980 MortRate
Pacific	177.35	13.3
New England	185.86	13.4
Mid-Atlantic	186.11	14.3
West North Central	128.82	13.3
East North Central	133.71	14.5
Mountain	133.45	11.7
West South Central	114.66	12.5
East South Central	99.46	14.3
South Atlantic	124.62	13.5

Genital Cancers, Female:
Regression Output:

Constant	12.9516
Std Err of Y Est	0.9611
R Squared	0.0138
No. of Observations	9
Degrees of Freedom	7
X Coefficient(s)	0.0033
Std Err of Coef.	0.0106
Coefficient / S.E.	0.3125

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