

CHAPTER 27

CNS Vascular Lesions, Deaths: Relation with Medical Radiation

Box 1 of Chap. 27

Summary: Regression Outputs, Deaths due to Central Nervous System Vascular Lesions

Below are the summary-results from all the regressions of MortRates upon PhysPops. MortRates are from Table 26-A, and PhysPops are from Table 3-A.

MALES .....

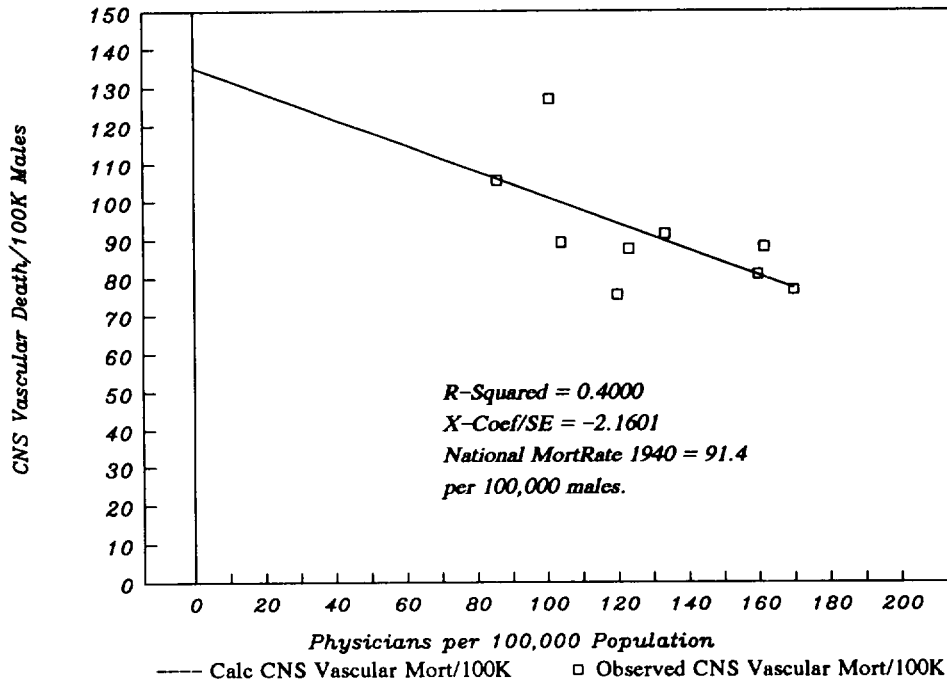
Year MortRate	Year PhysPop	R-squared	Constant	Coeff.	Std Err	Coeff/S.E
1940	1921	0.5421	193.710	-0.7601	0.2640	-2.8788
1940	1923	0.5419	184.147	-0.7084	0.2462	-2.8774
1940	1925	0.4434	166.720	-0.5942	0.2517	-2.3613
1940	1927	0.4431	162.328	-0.5691	0.2412	-2.3601
1940	1929	0.4451	159.599	-0.5518	0.2329	-2.3697
1940	1931	0.4448	153.904	-0.5031	0.2125	-2.3680
1940	1934	0.4357	146.170	-0.4384	0.1885	-2.3249
1940	1936	0.4470	145.069	-0.4270	0.1795	-2.3788
1940	1938	0.4323	141.248	-0.3942	0.1708	-2.3088
1940	1940	0.4000	135.252	-0.3414	0.1580	-2.1601
1950	1950	0.4472	132.943	-0.3228	0.1357	-2.3795
1960	1960	0.5130	135.143	-0.3660	0.1348	-2.7156
1970	1970	0.5226	100.265	-0.2316	0.0837	-2.7682
1980	1980	0.4458	66.878	-0.1183	0.0499	-2.3729
1990	1990	0.3417	42.580	-0.0532	0.0279	-1.9061

FEMALES .....

Year MortRate	Year PhysPop	R-squared	Constant	Coeff.	Std Err	Coeff/S.E
1940	1921	0.5588	169.367	-0.5889	0.1978	-2.9776
1940	1923	0.5502	161.414	-0.5447	0.1862	-2.9259
1940	1925	0.4371	147.169	-0.4503	0.1931	-2.3315
1940	1927	0.4104	142.185	-0.4180	0.1894	-2.2073
1940	1929	0.3975	139.278	-0.3980	0.1852	-2.1491
1940	1931	0.3882	134.657	-0.3587	0.1702	-2.1075
1940	1934	0.3558	127.864	-0.3023	0.1537	-1.9665
1940	1936	0.3540	126.536	-0.2900	0.1481	-1.9584
1940	1938	0.3267	123.158	-0.2615	0.1419	-1.8429
1940	1940	0.2882	118.496	-0.2211	0.1314	-1.6835
1950	1950	0.3109	112.772	-0.1927	0.1084	-1.7770
1960	1960	0.4617	113.406	-0.2418	0.0987	-2.4504
1970	1970	0.4847	82.261	-0.1534	0.0598	-2.5659
1980	1980	0.3875	52.030	-0.0784	0.0373	-2.1044
1990	1990	0.3719	34.472	-0.0386	0.0189	-2.0358

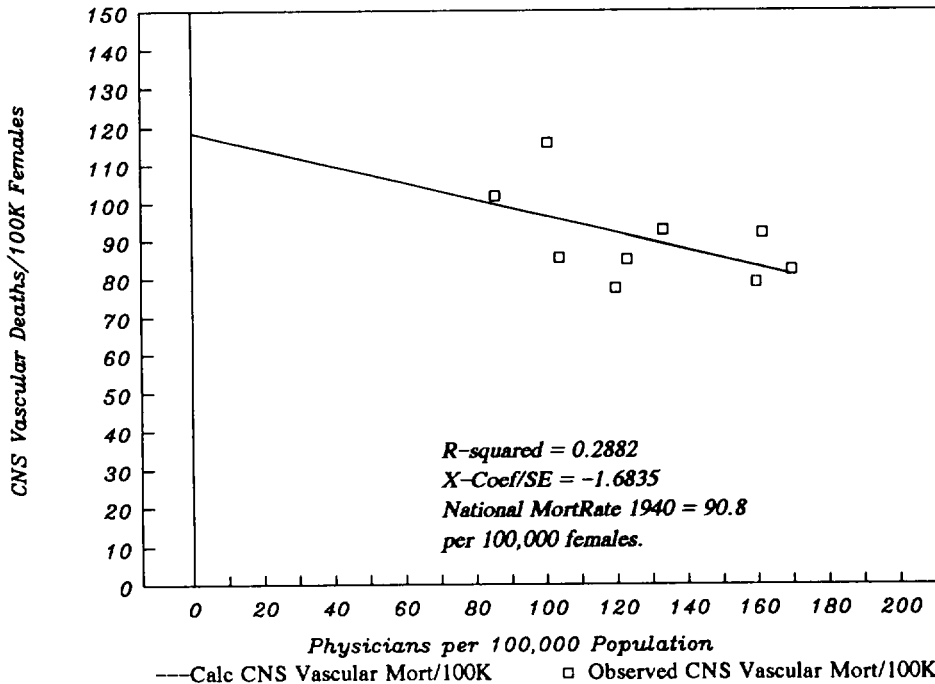
1940 MortRate, Males, CNS Vascular Deaths, versus  
1940 PhysPop Values for the 9 Census Divisions, USA.  
Significant INVERSE Relationship.

PhysPop is a surrogate for accumulated dose from medical irradiation.



1940 MortRate, Females, CNS Vascular Deaths, versus  
1940 PhysPop Values for the 9 Census Divisions, USA.  
Marginally Significant. All sign tests show Inverse Relationship

PhysPop is a surrogate for accumulated dose from medical irradiation



**Table 27-A**  
**Vascular Lesions Affecting the Central Nervous System**

Annual death-rates per 100,000 are age-adjusted to the 1940 reference year. There are no exclusions by color or "race." Entries for the Nine Census Divisions are population-weighted; the averages below them are not. "National Rates" for both sexes: Deaths per 100,000 population (males + females). Males: Deaths per 100,000 male population. Females: Deaths per 100,000 female population.

**MALES** .....

Census Division	1940	1950	1960	1970	1980	1990
Pacific	80.9	83.6	81.5	61.3	41.1	30.6
New England	88.0	85.3	81.0	59.1	37.2	24.9
West North Central	87.6	97.9	89.7	65.8	41.8	28.9
Mid-Atlantic	76.8	79.8	73.2	56.1	39.0	26.7
East North Central	91.5	95.5	90.2	68.0	45.8	30.7
Mountain	75.5	74.9	72.9	54.1	35.2	24.4
West South Central	89.3	88.3	93.6	71.9	50.1	33.1
East South Central	105.5	108.9	117.8	87.6	57.3	38.4
South Atlantic	126.9	118.7	106.6	78.7	50.8	33.7
Average ALL	91.3	92.5	89.6	66.9	44.3	30.2
Average High-Five	85.0	88.4	83.1	62.1	41.0	28.4
Average Low-Four	99.3	97.7	97.7	73.0	48.4	32.4
Ratio (High/Low)	0.86	0.91	0.85	0.85	0.85	0.88

**FEMALES** .....

	1940	1950	1960	1970	1980	1990
Pacific	78.9	81.3	78.9	58.0	37.0	27.1
New England	91.7	85.0	77.7	54.3	30.9	21.1
West North Central	84.8	92.1	84.6	59.3	33.9	23.4
Mid-Atlantic	82.1	83.1	71.7	52.6	33.4	22.7
East North Central	92.6	93.0	84.7	61.2	37.6	25.8
Mountain	77.5	75.4	70.5	50.9	31.2	22.6
West South Central	85.3	80.5	84.3	63.2	42.0	28.3
East South Central	101.7	103.8	103.0	74.3	45.6	30.4
South Atlantic	115.8	103.7	94.5	68.1	41.7	27.7
Average ALL	90.0	88.7	83.3	60.2	37.0	25.5
Average High-Five	86.0	86.9	79.5	57.0	34.6	24.0
Average Low-Four	95.1	90.9	88.1	64.1	40.1	27.3
Ratio (High/Low)	0.90	0.96	0.90	0.89	0.86	0.88

**NATIONAL RATES** .....

	1940	1950	1960	1970	1980	1990
Both Sexes	91.1	91.6	85.7	71.7	57.6	28.0
Males	91.4	93.4	88.9	76.7	64.4	30.3
Females	90.8	90.0	82.8	67.8	52.8	25.6

- - 1940, 1950, 1960: All rates come from Grove 1968, Table 67, Pages 713-716, "Vascular Lesions Affecting Central Nervous System (330-334)" ICD/7.
- - 1970 rates are interpolations (Chap. 4, Parts 2b, 2c).
- - 1980: All rates (ICD/9, 430-438) come from the reference NatCtrHS 1980.
- - 1990: Rates are for 1987-1989, from Monthly Vital Statistics Report, Vol.43, No.2, July 21, 1994. "Both sexes" combined is approximated as the average of male and female values. Details in Chap. 4, Part 2b.