

**Table S2** Space-time clustering studies of lymphoma

Author, Year	Study Area	Period	Quality	Resolution	Critical lags	Type of cancer	Age	Time	Cases	Method	Results		
											Rate of sig. Tests <sup>a</sup>	Significant test <sup>b</sup>	
Pinkel et al., 1963	Buffalo Area, NY, USA	1943-1956	2	Postcodes	s: 1/8, 2/8, ..., 1 mile t: not specified	HL	0-15	X	206	Average ridit	NA	(NA/NA) <sup>1</sup>	
Ederer et al., 1965	State of Connecticut, USA	1945-1959	2	Areas	s: same town t: 1, 2 years	Lymphoma	0-14	X	448	E-M-M	0	(0/2)	n.s.
Pike et al., 1967	West Nile District, Uganda	1961-1965	1	Geocodes	s: 2, 5, 10, 20, 40 km t: 30, 60, 90, 120, 180, 360 days	BL	0-12	X	36	Knox	0.633	(19/30)	BL, 0-12y, 40km, 180d
						BL	0-12	X	36	David & Barton 1966	NA	(NA/NA) <sup>2</sup>	
Glass et al., 1968	Los Angeles County, USA	1960-1964	1	Geocodes	s: same census region t: 1 year	Lymphoma	0-14	X	645	E-M-M	NA	(NA/NA) <sup>1</sup>	
Williams et al., 1969	West Nile District, Uganda	1966-1967	1	Geocodes	s: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 km t: 2 years	BL	0-10	X	29	Knox	0.6	(6/10)	BL, 0-10y, 9km, 2y
Fraumeni et al., 1969	United States of America	1960-1964	0	Areas	s: same region; same division; same state t: 1 year	HL	0-14	X	359	E-M-M	0	(0/3) <sup>3</sup>	n.s.
Brubaker et al., 1973	North Mara District, Tanzania	1964-1970	2	Geocodes	s: 1, 2, 4, 8, 16, 32 km t: 0.25, 0.5, 1, 2, 3, 4, 6 months	BL	0-14	X	36	Knox	0	(0/42)	n.s.
Morrow et al., 1976	Mengo District, Uganda	1959-1968	2	Geocodes	s: 2.5, 5, 10, 20, 40 km t: Knox: 30, 60, 90, 12, 180, 360 days; Barton: 5, 10, 15, 20, 25, 45, 60, 75, 120, 180 days	BL	0-19 <sup>4</sup>	X	113	Knox	0	(0/30)	n.s.
						BL	0-19 <sup>4</sup>	X	113	Barton 1965	0	(0/50)	
Morrow et al., 1977	Lango and Acholi districts, Uganda	1963-1968	2	Geocodes	s: 2.5, 5, 10, 20, 40 km t: 30, 60, 90, 120, 180, 360 days	BL	0-14+	X	85	Knox	0	(0/42)	n.s.
Williams et al., 1978	West Nile District, Uganda	1961-1975	2	Geocodes	s: 2.5, 5, 10, 20, 40 km t: 1, 2, 3, 4, 6, 12 months	BL	0-15+	X	35	Knox	0.633	(19/30) <sup>5</sup>	BL, 0-15y, 40km, 4mths, 61-65; BL, 0-15y, 10km, 12mths, 66-70, BL, 0-15y, 10km, 6mths, 71-75; BL, 0-15y, 10km, 6mths, 72-73
						BL	0-15+	X	72	Knox	0.067	(2/30) <sup>6</sup>	
						BL	0-15+	X	81	Knox	0.1	(3/30) <sup>7</sup>	
Biggar et al., 1979	Ghana	1970-1975	0	Areas	s: 40km t: 3, 6, 9, 12, 18, 24, 36 months	BL, Non-BL	NA	X	339	Knox (modified)	0.286	(2/7)	BL, na, 40km, 3mths

Table S2 continued

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Siemiatycki et al., 1980	North Mara, Tanzania; West Nile, Uganda	1961-1977	1	Geocodes	s: Knox: 5, 20 km; M: 24 combinations of time and space functions t: Knox: 4, 12 months; M: 24 combinations of time and space functions	BL	0-15	X	278	Knox, Mantel	0	(0/24) <sup>8</sup>	BL, 0-15y, 20km, 12mths, West Nile, 61-65; North Mara n.s.
						BL	0-15	X	278	Knox, Mantel	0	(0/24) <sup>9</sup>	
						BL	0-15	X	278	Knox, Mantel	0.458	(11/24) <sup>10</sup>	
						BL	0-15	X	278	Knox, Mantel	0	(0/24) <sup>11</sup>	
						BL	0-15	X	278	Knox, Mantel	0	(0/24) <sup>12</sup>	
Mangoud et al., 1985	Greater Manchester, UK	1962-1976	2	Postcodes	s: 0.5, 1, 2, 4, 8, 16 km t: 1, 2, 4, 8, 12, 24, 36, 48, 60, 72, 84 months	HL	0-14	X	39	Knox	0.197	(13/66)	HL, 0-14y, 1km, 1mth
Gilman et al., 1991	England, Scotland and Wales, UK	1966-1983	3	Postcodes	s: 1, 2, 3, 4, 5, 10, 20 km t: 0, 1, ..., 9, 12, 18, 24, 48 months	NHL	0-14	X	1251	Knox	0.071	(6/84) <sup>13</sup>	NHL, 0-14, 3km, 0mths; NH+unsp.Lymph, 0-14y, 3km, 0mths; NH+unsp.Lymph, 0-4y, 2km, 0mths; NH+unsp.Lymph, 5-14y, 5km, 24mths
						NH and unspecified Lymphoma	0-14	X	1363	Knox	0.06	(5/84) <sup>13</sup>	
						NH and unspecified Lymphoma	0-4	X	332	Knox	0.024	(2/84) <sup>13</sup>	
						NH and unspecified Lymphoma	5-14	X	1031	Knox	0.048	(4/84) <sup>13</sup>	
Knox et al., 1992	England, Wales and Scotland, UK	1966-1983	3	Postcodes	s: 0.5, 1, 1.5, 2, 5, 20, 100 km t: 0.5, 1, 2, 4, 12 months	Leuk+Lymph	0-14	X	8888	Knox	0.143	(6/42)	Leuk&Lymph, 0-14y, 0.5km, 2mths; Leuk&Lymph, 4-7y, 1.5km, 1mth
						Leuk+Lymph	0-3	X	NA	Knox	0	(0/42)	
						Leuk+Lymph	4-7	X	NA	Knox	0.095	(4/42)	
						Leuk+Lymph	8-13	X	NA	Knox	0	(0/42)	
Van Den Bosch et al., 1993	Malawi	1987-1989	1	Geocodes	s: 2.5, 5, 10, 15, 20 km t: 0.33, 1, 2, 3, 4, 6 months	BL	0-22	X	146	Knox	0.033	(1/30)	BL, 0-22y, 2.5km, 2mths; BL, 8-22y, 5km, 3mths
						BL	8-22	X	72	Knox	0.067	(2/30)	
Schneider et al., 1993	New Jersey, USA	1979-1985	2	Areas	s: same minor civil division (town) t: 7, 14 months	HL	0-14	X	5500 <sup>14</sup>	E-M-M	0.5	(1/2)	HL, 0-14y, 7mths; NHL, 0-14y, 7mths
						NHL	0-14	X	5500 <sup>14</sup>	E-M-M	0.5	(1/2)	

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											Rate of sig. Tests <sup>a</sup>	Significant test <sup>b</sup>	
Gilman et al., 1995	England, Wales and Scotland, UK	1953-1980	3	Postcodes	s: 1, 2, 3, 4, 5, 10, 20 km t: 0, 1, ..., 6, 9, 12, 18, 24, 48 months	Leuk+Lymph	0-15	B	1435	Knox	0.022	(1/45) <sup>15</sup>	B: Leuk+Lymph, 0-15y, 53-64, central Britain, 2km, 1mth, Leuk+Lymph, 0-15y, 53-64, outside central Britain, 1km, 3mths X: Leuk+Lymph, 0-15y, central Britain, 2km, 2mths, Leuk+Lymph, 0-15y, outside central Britain, 4km, same mth
						Leuk+Lymph	0-15	B	2478	Knox	0.044	(2/45) <sup>16</sup>	
						Leuk+Lymph	0-15	X	3862	Knox	0.067	(3/45) <sup>15</sup>	
						Leuk+Lymph	0-15	X	6511	Knox	0.178	(8/45) <sup>16</sup>	
Gilman et al., 1999	England and Wales (approx. 40%)	1984-1993	3	Geocodes	s: 1, 2, 3, 4, 5 km t: 0, 1, ..., 6, 9, 12, 18 months	HL	0-14	X	47	Knox	0	(0/1) <sup>17</sup>	HL, 0-14y, 2km, same mth, 89-93
						HL	0-14	X	34	Knox	0	(0/1) <sup>18</sup>	
Gustafsson et al., 2000	Sweden	1973-1996	2	Areas	s: same municipality t: 1, 3, 6, 12, 24 months	ALL + NHL	0-14	B	1313	Knox	0	(0/5)	B: n.s.
						ALL + NHL	0-4	B	791	Knox	0	(0/5)	X: n.s.
						ALL + NHL	0-1	B	NA	Knox	0	(0/5)	
						ALL + NHL	1-5	B	NA	Knox	0	(0/5)	
						ALL + NHL	2-4	B	NA	Knox	0	(0/5)	
						ALL + NHL	2-6	B	NA	Knox	0	(0/5)	
						ALL + NHL	4-14	B	688	Knox	0	(0/5)	
						ALL + NHL	5-14	B	522	Knox	0	(0/5)	
						ALL + NHL	0-14	X	NA	Knox	0	(0/5)	
						ALL + NHL	0-4	X	NA	Knox	0	(0/5)	
						ALL + NHL	0-1	X	NA	Knox	0	(0/5)	
						ALL + NHL	1-5	X	NA	Knox	0	(0/5)	
						ALL + NHL	2-4	X	NA	Knox	0	(0/5)	
						ALL + NHL	2-6	X	NA	Knox	0	(0/5)	
						ALL + NHL	4-14	X	NA	Knox	0	(0/5)	
ALL + NHL	5-14	X	NA	Knox	0	(0/5)							

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											Rate of sig. Tests <sup>a</sup>	Significant test <sup>b</sup>	
McNally et al., 2004	North West England, UK	1954-2001	3	Postcodes	s: Knox: 5 km, NN=b11/x11; K-f: 0.5-7.5 km, NN=4-18/4-18 t: Knox: 1 year; K-f: 1-15 months	Lymphoma	0-14	B	414	K-f	0	(0/2)	B: n.s.
						HL	0-14	B	188	K-f	0	(0/2)	X: n.s.
						NHL	0-14	B	211	K-f	0	(0/2)	
						HL+NHL	0-14	B	399	K-f	0	(0/2)	
						Lymphoma	0-14	B	414	Knox	0	(0/2)	
						HL	0-14	B	188	Knox	0	(0/2)	
						NHL	0-14	B	211	Knox	0	(0/2)	
						HL+NHL	0-14	B	399	Knox	0	(0/2)	
						Lymphoma	0-14	X	414	K-f	0	(0/2)	
						HL	0-14	X	188	K-f	0	(0/2)	
						NHL	0-14	X	211	K-f	0	(0/2)	
						HL+NHL	0-14	X	399	K-f	0	(0/2)	
						Lymphoma	0-14	X	414	Knox	0	(0/2)	
						HL	0-14	X	188	Knox	0	(0/2)	
NHL	0-14	X	211	Knox	0	(0/2)							
HL+NHL	0-14	X	399	Knox	0	(0/2)							
McNally et al., 2006	Great Britain	1969-1993	3	Postcodes	s: K-f: NN=19-33, Knox: not specified t: K-f: 0.1, 0.2, ..., 1.5 years; Knox: not specified	Lymphoma	0-14	X	3306	K-f	0	(0/1)	n.s.
						HL	0-14	X	1364	K-f	0	(0/1)	
						HL	0-9	X	487	K-f	0	(0/1)	
						NHL	0-14	X	1678	K-f	0	(0/1)	
						NHL	0-9	X	1027	K-f	0	(0/1)	
COMARE, 2006	England, Scotland and Wales, UK	1969-1993	3	Postcodes	s: 0.5, 1, 1.5, ..., 7.5 km t: 0.1, 0.2, ..., 1.5 years	HL	0-14	X	877	K-f	0	(0/1)	n.s.
						HL	0-9	X	487	K-f	0	(0/1)	
						NHL	0-14	X	1678	K-f	0	(0/1)	
						NHL	0-9	X	1027	K-f	0	(0/1)	
Kearney, 2008	Florida, USA	1990-1999	3	Areas	s: Census Tracts t: 1-10 years	Lymphoma (not including HL)	0-19	X	126	Scan	1	(1/1)	Lymphoma, 0-19y
McNally et al., 2009	Great Britain	1969-1993	3	Postcodes	s: K-f: NN=18-32, Knox: NN=25 t: K-f: 0.1, 0.2, ..., 1.5 years; Knox: 1 year	Lymphoma	0-14	B	2939	K-f	0	(0/1)	HL, 0-14y
						HL	0-14	B	1226	K-f	1	(1/1)	
						HL	0-9	B	444	K-f	0	(0/1)	
						NHL	0-14	B	1485	K-f	0	(0/1)	
						NHL	0-9	B	937	K-f	0	(0/1)	
Amin et al., 2010	Florida, USA	2000-2007	3	Areas	s: not specified t: individual years (not specified)	Lymphoma	0-19	X	252	Scan	0	(0/1)	n.s.
Ortega-Garcia et al., 2015	Murcia, Spain	1998-2013	2	Areas	s: census tracts t: months	Lymphoma	0-14	X	17	Scan	1	(1/1)	Lymph, 0-14y, 2 tracts, 07/11-06/13

Table S2 continued

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											Rate of sig. Tests <sup>a</sup>	Significant test <sup>b</sup>	
Kreis et al., 2016	Switzerland	1985-2010	4	Geocodes	s: 0.5, 1, 2, 5, 10 km t: 6, 12, 18, 24 months	Lymphoma	0-15	B	353	Knox	0	(0/1)	B: n.s.
						Lymphoma	0-15	X	635	Knox	0	(0/1)	X: n.s.

<sup>a</sup>Proportion of significant space-time clustering tests per analysis group (number of clustering tests significant at 5% alpha-level/total number of clustering tests performed).

<sup>b</sup>Characteristics of (most) significant space-time clustering test, specifying (if applicable): time frame of birth B: or diagnosis X: clustering test: diagnostic group, age range, spatial lag, temporal lag, sub-area, sub-period. Results are not adjusted for multiple testing.

**Critical lags:** *s* spatial lag, *t* temporal lag, *NN* nearest neighbors; **Type of Cancer:** *HL* Hodgkin lymphoma, *NHL* non-Hodgkin lymphoma, *BL* Burkitt lymphoma; **Time:** *B* date of birth, *X* date of diagnosis; **Method:** *E-M-M* Ederer-Myers-Mantel, *K-f* K-functions, *Scan* Kulldorff's Scan Statistic; **Results:** *NA* not available, *n.s.* not significant

<sup>1</sup>Excluded as lymphoma were not analyzed as separate diagnostic group

<sup>10</sup>West Nile, 1961-1965

<sup>2</sup>Excluded as number of tests performed is unclear

<sup>11</sup>West Nile, 1966-1970

<sup>3</sup>E-M-M summed for all states, division and regions

<sup>12</sup>West Nile, 1971-1976

<sup>4</sup>Separate analysis of children under 16 years

<sup>13</sup>Summary statistic for whole period used

<sup>5</sup>1961-1965; study group identical with Pike et al. 1967

<sup>14</sup>All diagnostic groups (not only lymphomas)

<sup>6</sup>1966-1970

<sup>15</sup>Inside central Britain

<sup>7</sup>1971-1975

<sup>16</sup>Outside central Britain

<sup>8</sup>North Mara, 1964-1970

<sup>17</sup>1984-1988, Bonferroni corrected

<sup>9</sup>North Mara, 1971-1977

<sup>18</sup>1989-1993, Bonferroni corrected