

COMMITTEE ON CARCINOGENICITY OF CHEMICALS IN FOOD, CONSUMER PRODUCTS AND THE ENVIRONMENT

CANCER COHORT AND CASE-CONTROL STUDY COMPARISONS

TABLE 3. CANCER COHORT STUDIES

3A. Cohorts and Exposure

Cohort	Alavanja (2005) Agricultural Health Study cohort	Engel (2005) Agricultural Health Study cohort	Flower (2004) Agricultural Health Study cohort	Kristensen (1996) offspring of personal farm owners in Norway, born 1952-1991
Exposure	spouse of private pesticide applicator	spouse of private pesticide applicator who never used pesticides	children of spouses of private pesticide applicators	offspring of parents engaged in agricultural activities

3B. Incidence Outcomes Reported for Each Cohort

	Alavanja (2005)	Engel (2005)	Flower (2004)	Kristensen (1996)
			child	
all sites combined	X			X
total (child)			X	
buccal cavity	X			
lip	X			
digestive system	X			
colon	X			
rectum	X			
liver	X			X
gallbladder	X			
pancreas	X			
respiratory system	X			
lung	X			
soft tissue	X		X	X
melanomas	X			X
female breast	X	X		X
female genital system	X			
ovary	X			X
cervix				X
male genital system	X			
prostate	X			
testis	X			X
urinary system	X			
kidney				X
brain and central nervous system	X			
brain tumours			X	X
non-astrocytic neuroepithelial tumour				X
neuroblastoma			X	X
retinoblastoma			X	
nervous system				X
thyroid and other endocrine	X			
thyroid				X
endocrine glands				X
lymphoma			X	
Hodgkin's disease	X		X	X
Non-Hodgkin's lymphoma	X		X	X
Burkitt's			X	
multiple myeloma	X			
leukaemia	X		X	X
mesothelioma	X			
bone tumours			X	X
germ cell tumours			X	
Wilms tumour			X	X
connective tissue				X
eye				X
acute leukaemia				X
acute lymphocytic leukaemia				X
acute myelocytic leukaemia				X
other acute leukaemias				X

3C. Exposure Scenarios and Rate/Odds Ratios Reported for Each Cohort

	Engel (2005) (women) (Rate Ratio reported)	Flower (2004) (children) (Odds Ratio reported)	Kristensen (1996) (Rate Ratio reported)
Exposure	grew up on farm	father's/mother's pesticide mixing and application	orchards or greenhouses on farm
	washed work clothes	father generally did/did not use chemically resistant gloves	pesticide purchase
	distance of home from areas of pesticide application		orchards or greenhouses on farm and pesticide purchase
	(husband's use of): carbamates, organophosphates, phenoxy herbicides, pyrethroids	(ever use by mother, father's prenatal use of): chlorophenoxy herbicides, organophosphate insecticides	pesticide spraying equipment
	(husband's use of): (insecticides) chlorpyrifos, diazinon, permethrin; (herbicides) dicamba, glyphosate, pendimethalin, trifluralin, 2,4-D; (fungicides) captan, chlorothalonil, maneb	(father's prenatal use of): chlorpyrifos; dicamba, glyphosate, trifluralin, 2,4-D	field vegetables on farm

TABLE 4. CASE-CONTROL STUDIES

4A. Child's Exposure to Parents' Occupational Use of Pesticides

STUDY	DISEASE	CHILD/ADULT	EXPOSURE
Buckley (2000)	Non-Hodgkin's Lymphoma (NHL)	child	parents' occupational use of pesticides
Meinert (2000)	leukaemias, lymphomas	child	parents' occupational use of pesticides
Monge (2007)	total leukaemia acute lymphocytic leukaemia (ALL)	child	parents' occupational use of pesticides
Van Wijngaarden (2003)	astrocytoma primitive neuroectodermal tumour (PNET)	child	parents' occupational use of pesticides
Flower (2004) (from cohort study)	childhood cancer, including haematopoietic cancers and brain tumours	child	father's/mother's mixing and/or applying pesticides >19 days/year

4B. Child's Exposure to Professional Pest Control Agents

STUDY	DISEASE	CHILD/ADULT	EXPOSURE
Alderton (2006)	ALL	child	professional pest control
Buckley (2000)	NHL	child	professional pest control
Cooney (2007)	Wilms' tumour	child	professional pest control
Daniels (2001)	neuroblastoma	child	professional pest control
Infante-Rivard (1999)	ALL	child	professional pest control
Ma (2002)	leukaemia ALL	child	professional pest control
Meinert (2000)	leukaemias lymphomas	child	professional pest control

4C. Mother's Exposure to Professional Pest Control Agents

STUDY	DISEASE	CHILD/ADULT	EXPOSURE
Alderton (2006)	ALL	child	professional pest control mother exposed in pregnancy
Buckley (2000)	NHL	child	professional pest control mother exposed in pregnancy
Cooney (2007)	Wilms' tumour	child	professional pest control
Daniels (2001)	neuroblastoma	child	professional pest control
Infante-Rivard (1999)	ALL	child	professional pest control mother exposed in pregnancy
Ma (2002)	leukaemia ALL	child	professional pest control mother exposed in pregnancy
Meinert (2000)	leukaemias lymphomas	child	professional pest control

4D. All Other Adult Exposure

STUDY	DISEASE	CHILD/ADULT	EXPOSURE
Carreon (2005)	primary intracranial glioma	adult	i) lived on farm ii) washed pesticide applicator clothes iii) pesticides stored in house
Colt (2006)	NHL	adult	exposure to: propoxur, carbaryl, chlorpyrifos, diazinon, <i>cis</i> -permethrin, <i>trans</i> -permethrin
Hartge (2005)	NHL	adult	exposure to: 2,4-D, dicamba
McDuffie (2001)	NHL	adult	residence on farm at any time
Ruder (2004) and Ruder (2006)	glioma	adult	i) ever lived/worked on farm ii) lived on farm after age 18 iii) washed pesticide applicator clothes iv) pesticides stored on farm
Kato (2004)	NHL	adult	professional pest control
Teitelbaum (2007)	breast cancer	adult	professional pest control outdoors, lawn and garden pesticides