

DDT**Prospective (nested studies)****Blood measures**

Study (reference)	Country	Study design			Unadjusted results		Adjusted results			Blood levels		Comments
		No of Cases	No of Controls	Comparison for OR	OR/RR (95% CI)	Trend test (p)	OR/RR (95% CI)	Adjusted for	Trend test (p)	Mean DDE (cases)	Mean DDE (controls)	
Høyer et al. (2000b) Cancer Causes and Control, 11, 177-184 Nested case-control study	Denmark	155	274	Highest compared to the lowest quartile			Age adjusted OR 1.3 (0.7-2.3)	Age	0.10	Median serum levels (all subjects regardless of case control status) 1 st examination (1976-1978) 144.2ng/g lipid 2 nd examination (1981-1983) 45.7ng/g lipid		[More limited details of analysis compared to Hoyer et al. 2000a]
Ward et al. (2000) Cancer Epidemiology Biomarkers & Prevention, 9, 1357-1367 Nested Hospital-based case-control study	Norway	150	150	Highest compared to lowest quartile	Odds ratios 0.3 (N.D.)	N.D.				Mean serum levels 119.5ng/g lipid	Mean serum levels 137.7ng/g lipid	
Hoyer et al. (1998) The Lancet 352, 1816-1820	Denmark	237	469	Highest compared to lowest quartile	p,p'DDT 1.31 (0.84-2.02) Total DDT 0.92 (0.54-1.56)	0.32 0.57	p,p'DDT 1.19 (0.76-1.87) Total DDT 0.84 (0.49-1.45)	Age, number of full term pregnancies and weight	0.52 0.65	Not reported		Study included large number (46 of statistical comparisons).

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Dorgan et al (1999) Cancer causes and control 10, 1-11 Nested case-control study	USA	105	207	Highest compared to the lowest quartile			Relative Risk p,p'-DDT 0.4 (0.2-1.0)	Matched by age, benign breast disease diagnosis during prior 2 years, month and year of blood collection	0.05	Not reported	Not reported	
							Total DDT 0.8 (0.4-1.6)		0.65			

DDT**Retrospective (case-control studies)****Blood measures**

		Study design			Unadjusted results		Adjusted results			Blood levels		Comments
Study (reference)	Country	No of Cases	No of Controls	Comparison for OR	OR/RR (95% CI)	Trend test (p)	OR/RR (95% CI)	Adjusted for	Trend test (p)	Mean DDE (cases)	Mean DDE (controls)	
Pavuk et al. (2003) Journal of exposure analysis & Environ. Epid. 13, 267-275	USA	24	88	Highest compared to lowest tertile			1.19 (0.27-5.23)	Age, age at menarche, education, alcohol consumption, pack years of smoking	0.68	Geometric mean 107.6ng/g	Geometric mean 163.8ng/g	
Charlier et al. (2003) Occup environ Med 60, 348-351 Case-control study	Belgium	159	250	Not stratified	Odds ratio Total DDT 5.36 (1.89-15.19)		Odds ratio Total DDT 5.66 (1.83-17.51) 5.64 (1.81-17.65)	Adjusted for presence of HCB Breast feeding history	N.D. N.D.	N.D.	N.D.	
Gammon et al. (2002) Cancer Epidemiology & Prevention, 11, 686-697 Population-based case-control study	USA	615	419	Upper compared to lowest quintile			Age adjusted OR 0.97 (0/66-1.44) Multivariate-adjusted OR 1.15 (0.74-1.79)	Age Age, race, history of fertility problems, history of benign breast disease	0.05	Geometric means (serum) 68.98ng/g lipid	Geometric means (serum) 69.32ng/g lipid	No increase in risk due to Breastfeeding status, weight, postmenopausal status, invasive/ <i>in situ</i> disease, hormone receptor positive tumour

DDT**Retrospective (case-control studies)****Blood measures**

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Demers et al., (2000) Cancer Epidemiology, Biomarkers & Prevention, 9, 161-166 Hospital-based case-control study	Canada	315	219 hospital controls (HC)	Upper compared to lowest quintile			Relative Risk (RR)	Age, region of residence, BMI, breast feeding duration, age at first child, number of fertile years, family history of breast cancer, history of benign breast cancer	N.D.	Mean plasma levels 12.7µg/kg lipid	Mean plasma levels HC 12.5µg/kg lipid lipid	
			307 population controls (PC)				Using PC) 0.81 (0.48-1.37)				Age, region of residence	
Wolff et al. (2000b) Environmental Research, 84, 151-161 Hospital-based case-control study	USA	175	355	Highest compared to lowest tertile			Adjusted Odds Ratio 1.34 (0.82-2.2)	Age, menopausal status, and race	0.241	Geometric mean serum levels 0.030µg/g lipid	Geometric mean serum levels 0.028µg/g lipid	DDT were higher in women with ER-positive tumours than in those with ER-negative tumours, however the differences were not significant after adjusting for age, BMI, menopausal status and race
Romieu et al. (2000) American Journal of Epidemiology, 152 363-70 Case Control study	Mexico	120	126	Not stratified			Adjusted OR 1.03 (0.74-1.43) per loge, unit of lipid adjusted DDT in serum	Age		Mean serum levels 0.15µg/g lipid	Mean serum levels 0.23µg/g lipid	

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Study (reference)	Country	No of Cases	No of Controls	Comparison for OR	OR/RR (95% CI)	Trend test (p)	OR/RR (95% CI)	Adjusted for	Trend test (p)	Mean DDE (cases)	Mean DDE (controls)	
Schrecker <i>et al.</i> (1997) Arch. Environ. Contam. Toxicology, 33, 453-456 Case control study 21 cases, 21 controls	Vietnam	21	21	Highest compared to lowest tertile	Odds ratio 1.21 (0.23-5.68)					Mean levels (serum) 2.37ng/ml	Mean levels (serum) 2.33ng/ml	

DDT**Retrospective (case-control) studies****Adipose measures**

Study (reference)	Country	Study design			Unadjusted results		Adjusted results			Blood levels		Comments
		No of Cases	No of Controls	Comparison for OR	OR/RR (95% CI)	Trend test (p)	OR/RR (95% CI)	Adjusted for	Trend test (p)	Mean DDE (cases)	Mean DDE (controls)	
Bagga et al. (2000) J. Natl. Canc. Inst 92, 750-753	USA	73	73	Not stratified			1.052 (0.930-1.191)	Age		Unadjusted mean levels (lipid basis) 261.6ng/g	Unadjusted mean levels (lipid basis) 267.3ng/g	Levels of DDE in cases and controls not significantly different (p=0.23)
Aronson et al. (2000) Cancer Epidemiology, Biomarkers & Prevention, 9, 55-63 Hospital-based case-control study	Canada	217	213	Highest compared to lowest quartile			Adjusted OR 1.18 (0.61-2.29)	Age, study site, menopausal status, age last breast fed, ethnicity, BMI, fat intake, alcohol intake	N.D.	Geometric means (breast adipose tissue) 22.0µg/kg lipid	Geometric means (breast adipose tissue) 19.3µg/kg lipid	Increased risk in premenopausal women (adjusted OR = 1.52), but no measure of significance
Stellman et al. (2000) Cancer Epidemiology, Biomarkers & Prevention, 9, 1241-1249 Hospital-based case-control study	USA	232	323	Highest compared to lowest tertile			Odds ratios were not reported, although the authors stated that no associations were found with breast cancer risk		N.D.	Median levels (adipose tissue) 12.3ng/g	Median levels (adipose tissue) 12.1ng/g	There were no significant odds ratios or trends when the authors considered associations between breast cancer risk and body burden of p,p' DDT.
Guttes et al. (1998) Arch. Environ. Contam. Toxicol 35, 140-147	Germany	45 (breast cancer)	20 (benign breast cancer)							Age adjusted geometric mean 30µg/kg	Age adjusted geometric mean 28µg/kg	No determination of odds ratio. No significant difference between cases and controls (p=0.714)

DDT**Retrospective (case-control) studies****Adipose measures**

Study (reference)	Country	Study design			Unadjusted results		Adjusted results			Blood levels		Comments
		No of Cases	No of Controls	Comparison for OR	OR/RR (95% CI)	Trend test (p)	OR/RR (95% CI)	Adjusted for	Trend test (p)	Mean DDE (cases)	Mean DDE (controls)	
Falck <i>et al.</i> (1992) Arch. Environ Health, 47, 143-146	USA	20	20							Mean breast adipose levels (wet weight, corrected for recovery) 179ng/g Mean breast adipose levels (lipid basis, uncorrected) 216ng/g	Mean breast adipose levels (wet weight, corrected for recovery) 14ng/g* Mean breast adipose levels (lipid basis, uncorrected) 148ng/g	Significance of differences between cases and controls were 0.05 and 0.12 for wet weight basis and lipid basis respectively *Figure given by Falck, but does not correspond with range given
Mussalo-Rauhamaa (1990) Cancer 66, 212402128	Finland	41	33							Mean level in adipose breast tissue 0.07mg/kg fat	Mean level in adipose breast tissue 148mg/kg fat	No statistical difference between cases and controls (P=0.57)
Zheng <i>et al.</i> (1999) Am. J. Epid. 150, 453-458	USA	304	186	Highest compared to lowest quartile			Adjusted odds ratio 0.8 (0.5-1.5)	NEED TO CHECK	NEED TO CHECK	age-adjusted geometric mean tissue level of DDE 51.8 ppb)	Age-adjusted geometric mean tissue level of DDE 55.6 ppb)	

DDT**Hormone Receptor Status
Adipose measures**

Study (reference)	Country	Study design			Unadjusted results		Adjusted results			Blood levels		Comments
		No of Cases	No of Controls	Comparison for OR	OR/RR (95% CI)	Trend test (p)	OR/RR (95% CI)	Adjusted for	Trend test (p)	Mean DDE (cases)	Mean DDE (controls)	
Woolcott et al. (2001) Cancer Causes Control, 12, 395-404 Hospital-based case-control study 217 cases (ER & PR determined), 213 controls	Canada	217	213	Highest compared to the lowest tertile			OR not shown		N.D.	Geometric means (breast adipose tissue) (ER+) 21.3µg/kg lipid <hr/> (ER-) 23.5µg/kg lipid	Geometric means (breast adipose tissue) 19.3µg/kg lipid (controls)	

DDT**Other studies****Blood measures**

		Study design			Unadjusted results		Adjusted results			Blood levels		Comments
Study (reference)	Country	No of Cases	No of Controls	Comparison for OR	OR/RR (95% CI)	Trend test (p)	OR/RR (95% CI)	Adjusted for	Trend test (p)	Mean DDE (cases)	Mean DDE (controls)	
Høyer et al. (2002) Breast Cancer Research and Treatment, 71, 59-65 Nested case control study		240 (162 for p53 mutation analysis),	477				Odds ratios	Age, Parity, body weight, HRT	0.98	Serum levels of organochlorines were not reported		
							p,p' DDT 0.95 (0.30-2.98) (P53 mut, 36 cases 72 controls)					
							1.32 (0.68-2.59) (Wild type p53 123 cases 244 controls)					
							total DDT 0.88 (0.19-4.17) (P53 mut, 28 for cases 56 controls)					
							0.78					
							0.70 (0.32-1.55) (Wild type p53 86 cases 171 controls)		0.98			

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Høyer et al. (2000a) Journal of Clinical Epidemiology, 53, 323-330 Breast survival analysis (cohort of 7712 women)		Exams		Highest compared to lowest quartile			RR	Age	N.D.	Mean serum levels		[Analysis of dieldrin, beta-HCH, HCB, op DDT, op DDE, pp DDT, pp DDE, pp DDD and 27 PCB congeners + total PCB]
							p,p' DDT					
							1 st 1.56 (0.92-2.64) 87 cases 102 controls					
							2 nd 1.18 (0.39-3.62) 35 cases 31 controls					
							total DDT					
							1 st 1.12 (0.60-2.07) 64 cases 72 controls		N.D.	total DDT 1548.5ng/g lipid (1 st)		
							2 nd 1.53 (0.42-2.97) 34 cases 31 controls		N.D.	1504.09ng/g lipid (2 nd)		