

**TABLE 1
INTAKE RATES USED TO CALCULATE INDIRECT EXPOSURE**

INPUT PARAMETER	UNITS	ADULT (20 to 70 y)			TEEN (12 to 19 y)			CHILD (5 to 11 y)			TODDLER (0.5 to 4 y)			NEONATE (0 to 0.5 y)		
		Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev
General Receptor Characteristics																
Body weight	kg	LN	71	14	LN	60	14	LN	27	7.3	LN	15	3.8	LN	7.5	3.2
Inhalation rate	m ³ /d	LN	16	3.9	LN	16	4	LN	15	3.2	LN	9.3	2.6	LN	2.1	0.57
Receptor Ingestion Rates																
Tap water	L/d	LN	0.8	0.52	LN	1	0.67	LN	1.1	0.7	LN	0.7	0.46	LN	0.8	0.52
Beverages	L/d	LN	0.96	0.62	LN	0.43	0.28	LN	0.23	0.15	LN	0.12	0.08	-	-	-
Cereals	g/d	LN	27	16	LN	24	15	LN	34	22	LN	42	27	-	-	-
Dairy products (excl. milk)	g/d	LN	53	34	LN	50	33	LN	45	29	LN	38	25	-	-	-
Eggs	g/d	LN	32	21	LN	22	14	LN	21	14	LN	24	16	-	-	-
Fats and oils	g/d	LN	25	16	LN	29	19	LN	21	14	LN	11	7.1	-	-	-
Fish	g/d	LN	14	9	LN	11	7.3	LN	8.4	5.5	LN	3.4	2.2	-	-	-
Fruits	g/d	LN	190	120	LN	160	100	LN	200	130	LN	190	120	-	-	-
Grains	g/d	LN	160	100	LN	210	130	LN	190	120	LN	90	58	-	-	-
Meats	g/d	LN	95	61	LN	93	60	LN	55	36	LN	38	25	-	-	-
Milk	L/d	LN	0.23	0.15	LN	0.523	0.34	LN	0.564	0.37	LN	0.632	0.41	-	-	-
Nuts and beans	g/d	LN	28	18	LN	31	20	LN	24	15	LN	15	9.7	-	-	-
Other foods	g/d	LN	220	144	LN	250	160	LN	210	140	LN	270	180	-	-	-
Poultry	g/d	LN	21	14	LN	20	13	LN	17	11	LN	13	8.6	-	-	-
Processed meats	g/d	LN	22	14	LN	23	15	LN	19	12	LN	11	7	-	-	-
Vegetables	g/d	LN	230	150	LN	240	150	LN	190	120	LN	120	76	-	-	-
Infant formula (powder)	g/d	-	-	-	-	-	-	-	-	-	-	-	-	LN	130	85
Breast milk	L/d	-	-	-	-	-	-	-	-	-	-	-	-	LN	0.75	0.49
Total food	g/d	LN	2300	1495	LN	2100	1365	LN	1800	1170	LN	1500	975	LN	820	533
Incidental soil	mg/d	LN	40	100	LN	40	100	LN	40	100	LN	40	100	LN	40	100

Incidental dust	mg/d	LN	40	100												
Exposure Frequency																
Time spent indoors	h/d	U	20 to 24													

NOTE: Dist = Distribution type; LN = log normal; U = uniform
References for information provided in Clark *et al.* 2003b

**TABLE 2
CONCENTRATIONS USED TO CALCULATE INDIRECT EXPOSURE**

CONCENTRATION	Units	DMP			DEP			DBP			DiBP			BBP			DEHP			DiNP		
		Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev	Dist	Mean	Std Dev
MEDIUM																						
Outdoor air	µg/m ³	LN	0.0033	0.0021	LN	0.013	0.0085	LN	0.012	0.008	LN	0.015	0.0081	LN	0.002	0.001	LN	0.018	0.01	LN	0.01	0.007
Indoor air	µg/m ³	LN	0.923	0.60	LN	0.91	0.59	LN	1.06	0.69	LN	0.5	0.3	LN	0.04	0.02	LN	0.274	0.18	LN	0.011	0.007
Drinking water	µg/L	LN	0.027	0.018	LN	0.12	0.08	LN	0.19	0.12	LN	0.26	0.17	LN	0.06	0.04	LN	1.8	1.2	C	0	-
Ingested soil	µg/g	LN	0.0002	0.00013	LN	0.0023	0.0015	LN	0.01	0.007	LN	0.017	0.011	LN	0.00	0.00	LN	0.025	0.016	LN	0.011	0.007
Ingested dust	µg/g	LN	2.0	1.3	LN	25	16	LN	132	86	LN	86	56	LN	236	153	LN	901	586	LN	420	273
Food																						
Beverages excl. water	µg/L	C	0	-	-	-	-	-	-	-	LN	6	3.9	-	-	-	-	-	-	-	-	-
Cereals	µg/g	C	0	-	-	-	-	-	-	-	C	0	-	-	-	-	-	-	-	-	-	-
Dairy products	µg/g	C	0	-	-	-	-	-	-	-	C	0	-	-	-	-	-	-	-	-	-	-
Eggs	µg/g	C	0	-	-	-	-	-	-	-	LN	0.1	0.07	-	-	-	-	-	-	-	-	-
Fats and oils	µg/g	C	0	-	-	-	-	-	-	-	C	0	-	-	-	-	-	-	-	-	-	-
Fish	µg/g	LN	0.0012	0.0008	-	-	-	-	-	-	LN	0.011	0.008	-	-	-	-	-	-	-	-	-
Fruit products	µg/g	C	0	-	-	-	-	-	-	-	LN	0.03	0.02	-	-	-	-	-	-	-	-	-
Grains	µg/g	C	0	-	-	-	-	-	-	-	LN	0.03	0.08	-	-	-	-	-	-	-	-	-
Meats	µg/g	C	0	-	-	-	-	-	-	-	LN	0.05	0.03	-	-	-	-	-	-	-	-	-

Milk	µg/L	LN	0.7	0.5	-	-	-	-	-	-	LN	17	11	-	-	-	-	-	-	-	-	
Nuts and beans	µg/g	C	0	-	-	-	-	-	-	-	C	0	-	-	-	-	-	-	-	-	-	
Other foods	µg/g	C	0	-	-	-	-	-	-	-	C	0	-	-	-	-	-	-	-	-	-	
Poultry	µg/g	C	0	-	-	-	-	-	-	-	LN	0.0 6	0.0 4	-	-	-	-	-	-	-	-	
Processed meats	µg/g	C	0	-	-	-	-	-	-	-	LN	0.0 3	0.0 2	-	-	-	-	-	-	-	-	
Vegetable products	µg/g	C	0	-	-	-	-	-	-	-	LN	0.0 05	0.0 03	-	-	-	-	-	-	-	-	
Infant formula - powder	µg/g	C	0	-	C	0	-	LN	0.04 8	0.0 31	LN	0.0 6	0.0 4	LN	0.00 3	0.00 2	LN	0.15	0.10	C	0	-
Breast milk	µg/g	C	0	-	LN	0.0003 1	0.000 2	LN	0.00 15	0.0 01	C	0	-	LN	0.00 08	0.00 05	LN	0.148	0.096	C	0	-
Composite diet samples	µg/g	-	-	-	T	0.0001, 0.0002, 0.026		LN	0.03 3	0.0 21	-	-	-	LN	0.01 4	0.00 9	LN	0.39	0.25	LN	0.018	0.012

NOTE: Dist. = Distribution type; LN = log normal; C = constant, T = triangular
 Measured concentrations obtained from numerous references, contained in ACC database (Clark 2008)

TABLE 3
SUMMARY COMPARISON OF INDIRECT AND BIOMARKER METHODS

PE	PE INTAKE ($\mu\text{kg}^{-1} \text{d}^{-1}$) ^a	
	INDIRECT STUDIES	BIOMARKER STUDIES ^b
DMP	Diet only: 0.11	0.031 to 0.87 [0.38]
	Diet, air, dust: 0.16 to 0.38	
	Diet, air, dust, consumer products: 0.90	
DEP	Diet only: 0.007 to 0.13	0.77 to 12.3 [5.5]
	Diet, air, dust: 0.051 to 0.46	
	Diet, air, dust, consumer products: 4.27	
DBP	Diet only: 0.26 to 0.29	0.58 to 5.3 [1.7]
	Diet, air, dust: 0.44 to 2.7	
	Diet, air, dust, consumer products: 4.82	
DiBP	Diet only: 0.57	0.08 to 1.7 [1.45]
	Diet, air, dust: 0.76	
	Diet, air, dust, consumer products: 0.48	
BBP	Diet only: 0.068 to 0.23	0.093 to 0.88 [0.3]
	Diet, air, dust: 0.062 to 0.50	
	Diet, air, dust, consumer products: 0.25	
DEHP	Diet only: 2.43 to 10.4	0.60 to 33.9 [2.7]
	Diet, air, dust: 2.1 to 11	
	Diet, air, dust, consumer products: 2.16	
DiNP	Diet only: 0.094 to 1.3	0.21 to 0.7 [0.45]
	Diet, air, dust: 0.67	
	Diet, air, dust, consumer products: 0.01	

Notes:

a - Adult, median or geometric mean; see Tables 4 to 10 for source of information. Excludes studies of pregnant women.

b - Format: range [median].

TABLE 4
DMP EXPOSURE ESTIMATES

STUDY	DMP INTAKE ($\mu\text{gkg}^{-1}\text{d}^{-1}$)				
	ADULT	TEEN	CHILD	TODDLER	INFANT
Present evaluation					
Update to Clark <i>et al.</i> (2003b), using concentrations in Table 2. Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years. Data format: median (95th %)	Age 20 to 70 y: 0.16 (0.48)	Age 12 to 19 y: 0.19 (0.60)	Age 5 to 11 y: 0.40 (1.2)	Age 0.5 to 4y: 0.47 (1.4)	Age 0 to 0.5 y: 0.22 (0.8)
Clark <i>et al.</i> (2003b)					
Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years	Age 20 to 70 y: 0.7	Age 12 to 19 y: 0.7	Age 5 to 11 y: 1.4	Age 0.5 to 4y: 1.6	Age 0 to 0.5 y: 0.05
Wormuth <i>et al.</i> (2006) + suppl data					
Europe: based on oral, inhalation, and dermal exposure pathways, including consumer products; data format = low, intermediate, high estimate; F = female; M = male	Age 18 to 80 y: F: 0.06; 0.94; 7.31 M: 0.08; 0.85; 5.99	Age 11 to 18 y: F: 0.07; 0.59; 3.50 M: 0.05; 0.53; 3.55	Age 4 to 10 y: 0.05; 0.46; 5.92	Age 1 to 3 y: 0.08; 0.76; 9.78	Age 0 to 1 y 0.2; 1.27; 16.97
Fromme <i>et al.</i> (2007b)					
Germany (2005): intake estimated from composite dietary samples collected over 7 days; N = 50 (27 female + 23 male)	Age 14 to 60 y: 0.11 (median); 0.18 (95th %); 0.05-0.26 (range)		-	-	-
Itoh <i>et al.</i> (2007)					
Japan:					
Based on ingestion of food and inhalation of indoor air; data compiled from various sources	0.38 (mean)	-	-	-	-
Calculated from urinary metabolite data for MMP (2004); N = 35	1.4 to 2.0 (range of means); 0.60 to 0.87 (range of geo means)	-	-	-	-
CDC (2005)^a					
USA (NHANES 2001-2002): Calculated from urinary metabolite data for MMP; data format: geo mean (95th %)					
N = 2772	Age 6+ y: Total: 0.034 (0.25); Male: 0.034 (0.23); Female: 0.034 (0.28)			-	-

N = 1638	Age 20+ y: 0.031 (0.24)	-	-	-	-
N = 742	-	Age 12 to 19 y: 0.021 (0.12)	-	-	-
N = 392	-	-	Age 6 to 11 y: 0.028 (0.21)	-	-
Huang et al. (2006) Taiwan (undated): Calculated from urinary metabolite data for MMP; pregnant women; N = 28	0.3 (median)	-	-	-	-

NOTES:

a - Daily intake calculated from reported urinary metabolite data, as described in text.

TABLE 5
DEP EXPOSURE ESTIMATES

STUDY	DEP INTAKE ($\mu\text{gkg}^{-1}\text{d}^{-1}$)				
	ADULT	TEEN	CHILD	TODDLER	INFANT
Present evaluation					
Update to Clark <i>et al.</i> (2003b), using concentrations in Table 2. Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years. Data format: median (95th %)	Age 20 to 70 y: 0.46 (1.0)	Age 12 to 19 y: 0.46 (1.3)	Age 5 to 11 y: 0.93 (2.8)	Age 0.5 to 4y: 1.2 (3.8)	Age 0 to 0.5 y: 0.34 (1.2)
Clark <i>et al.</i> (2003b)					
Based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years	Age 20 to 70 y: 2.5 (median)	Age 12 to 19 y: 3.0 (median)	Age 5 to 11 y: 5.7 (median)	Age 0.5 to 4y: 10.6 (median)	Age 0 to 0.5 y: 0.2 (median)
Wormuth <i>et al.</i> (2006) + suppl data					
Europe: based on oral, inhalation, and dermal exposure pathways, including consumer products; data format = low, intermediate, high estimate; F = female; M =male	Age 18 to 80 y: F: 0.01, 4.06, 84.11 M: 0.02; 4.47; 49.27	Age 11 to 18 y: F: 0.01; 1.76; 20.94 M: 0.03; 1.53; 12.12	Age 4 to 10 y: 0.27; 1.23; 7.12	Age 1 to 3 y: 0.56; 2.46; 13.89	Age 0 to 1 y 1.25; 4.37; 23.86
Fromme <i>et al.</i> (2007b)					
Germany (2005): intake estimated from composite dietary samples collected over 7 days; N = 50 (27 female + 23 male)	Age 14 to 60 y: 0.13 (median); 0.34 (95th %); 0.06-0.49 (range)		-	-	-
Fromme <i>et al.</i> (2007b)					
Germany (2002: Koch <i>et al.</i> 2003a): N = 85		Age 7 to 63 y:			
Calculated from urinary metabolite data for MEP; data format: median (95th %)		Female: 4.6 (38.5); Male: 2.0 (42.4)		-	-
Tsumura <i>et al.</i> (2001a)					
Japan (1999): Based on total diet study of hospital food; calculated using body weight of 50 kg.	0.007 (mean)	-	-	-	-
Itoh <i>et al.</i> (2007)					
Japan:					

Based on ingestion of food and inhalation of indoor air; data compiled from various sources	0.051 to 0.065 (range of means)	-	-	-	-
Calculated from urinary metabolite data for MEP (2004); N = 35	0.77 to 1.2 (range of means)	-	-	-	-
Calafat and McKee (2006)					
USA (NHANES 2001-2002; CDC, 2005): Calculated from urinary metabolite data for MEP; data format: geo mean (95th %) N = 2772	Age 6 to > 20 y: 5.5 (61.7); Male: 4.9 (69.0); Female: 6.2 (47.4)	-	-	-	-
N = 742	-	Age 12 to 19 y: 5.0 (44.1)	-	-	-
N = 392	-	-	Age 6 to 11 y: 1.8 (15.3)	-	-
Marsee et al. (2006)					
USA (2000-2003): pregnant women (N = 214): Calculated from urinary metabolite data for MEP	6.64 (median); 112.3 (95th %)	-	-	-	-
CDC (2003)^a					
USA (NHANES 1999-2000): Calculated from urinary metabolite data for MEP; data format: geo mean (95th %) N = 2536	Age 6+ y: Total: 5.4 (64.7); Male: 5.4 (74.1); Female: 5.6 (57.4)	-	-	-	-
N = 1456	Age 20+ y: 5.9 (72.0)	-	-	-	-
N = 752	-	Age 12 to 19 y: 2.6 (28.3)	-	-	-
N = 328	-	-	Age 6 to 11 y: 1.7 (11.4)	-	-
Brock et al. (2002)^a				Age 11.8 to 16.5 months:	
USA (2000): Intake calculated from urinary metabolite data for MEP; 19 children; 30 samples	-	-	-	6.3 (geo mean); 37 (95th %)	-
David (2000)	Age 20 to 60 y:				
USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MEP (Blount, et al. 2000); N = 289	12.34 (geo mean); 93.33 (95th %)	-	-	-	-
Kohn et al. (2000)	Age 20 to 60 y:				
USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MEP (Blount, et al. 2000); N = 289	12 (median); 110 (95th %)	-	-	-	-
Huang et al. (2006)					

Taiwan (undated): Calculated from urinary metabolite data for MEP; pregnant women; N = 28	3.01 (median)	-	-	-	-
Chen <i>et al.</i> (2008)	Age 21 to 67 y:				
Taiwan (undated): Calculated from urinary metabolite data for MEP; N = 60 (41 female, 18 male)	nd (median); nd to 27.9 (range)	-	-	-	-

NOTES:

a - Daily intake calculated from reported urinary metabolite data, as described in text.

nd - Not detected

TABLE 6
DBP EXPOSURE ESTIMATES

STUDY	DBP INTAKE ($\mu\text{kg}^{-1}\text{d}^{-1}$)				
	ADULT	TEEN	CHILD	TODDLER	INFANT
Present evaluation Update to Clark <i>et al.</i> (2003b), using concentrations in Table 2. Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years. Data format: median (95th %)	Age 20 to 70 y: 1.2 (3.0)	Age 12 to 19 y: 1.2 (4.0)	Age 5 to 11 y: 2.4 (8.1)	Age 0.5 to 4y: 3.4 (12)	Age 0 to 0.5 y: 1.5 (5.7) formula-fed; 0.78 (4.0) breast-fed
Clark <i>et al.</i> (2003b) Based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years	Age 20 to 70 y: 5.6 (median)	Age 12 to 19 y: 6.4 (median)	Age 5 to 11 y: 11 (median)	Age 0.5 to 4y: 14 (median)	Age 0 to 0.5 y: 1.5 (formula-fed); 2.9 (breast-fed) (median)
Wormuth <i>et al.</i> (2006) + suppl data Europe: based on oral, inhalation, and dermal exposure pathways, including consumer products; data format = low, intermediate, high estimate; F = female; M =male	Age 18 to 80 y: F: 1.42; 5.33; 54.20 M: 1.63; 4.31; 25.82	Age 11 to 18 y: F: 0.19; 1.74; 17.35 M: 0.17; 1.37; 17.02	Age 4 to 10 y: 0.83; 2.41; 19.60	Age 1 to 3 y: 0.35; 2.62; 26.74	Age 0 to 1 y 1.02; 7.37; 45.63
Franco <i>et al.</i> (2007) Based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years Based on ingestion of leaf and root crops, fish, beef, dairy, drinking water, and inhalation of outdoor air using the EUSES model and data from the Netherlands	2.7 (median) 0.21 (median)	- -	- -	- -	- -
Wilson <i>et al.</i> (2003) USA (1997): Based on ingestion of food, dust, and soil and inhalation of indoor and outdoor air	-	-	-	Age 2 to 5 y: 1.4 (mean); 0.745 to 2.85 (range)	-
Tsumura <i>et al.</i> (2003) Japan (2001): Based on total diet study of hospital food; calculated using body weight of 50 kg.	0.26	-	-	-	-
Tsumura <i>et al.</i> (2001a)					

Japan (1999): Based on total diet study of hospital food; calculated using body weight of 50 kg	0.29	-	-	-	-
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Itoh et al. (2007)

Japan:

Based on ingestion of food and inhalation of indoor air; data compiled from various sources	0.44 to 0.75 (range of means)	-	-	-	-
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Calculated from urinary metabolite data for MBP (2004); N = 35	1.7 (mean)	-	-	-	-
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Fromme et al. (2007a and b)

Germany (2005): N = 50 (27 female + 23 male)

Age 14 to 60 y:

Calculated from composite dietary samples collected over 7 days	0.26 (median); 1.35 (95th %); 0.12-1.63 (range)	-	-	-	-
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Calculated from urinary metabolite data for MBP; data format: median (95th %)	Total: 1.7 (4.2)	-	-	-	-
	Female: 1.7 (4.4); Male: 1.8 (3.9)	-	-	-	-

Fromme et al. (2007b)

Germany (2002: Koch et al 2003a): N = 85

Age 7 to 63 y:

Calculated from urinary metabolite data for MBP; data format: median (95th %)	Female: 6.0 (17.5); Male: 4.6 (15.9)	-	-	-	-
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Wittassek et al. (2007b)

Germany: Calculated from urinary metabolite data for MBP; male and female adults; data format: median; 95th %; (range)

Age 20 to 29 y:

1988 (N = 60)	7.0; 24.2; (0.72-27.8)	-	-	-	-
1989 (N = 60)	7.5; 21.7; (1.5-70.1)	-	-	-	-
1991 (N = 60)	6.4; 14.3; (2.1-28.7)	-	-	-	-
1993 (N = 60)	6.6; 44.4; (1.5-56.3)	-	-	-	-
1996 (N = 145)	3.7; 15.5; (1.1-90.2)	-	-	-	-
1998 (N = 68)	3.1; 11.9; (0.22-20.3)	-	-	-	-
1999 (N = 60)	2.8; 16.2; (0.83-32.8)	-	-	-	-
2001 (N = 60)	2.5; 19.4; (0.81-116)	-	-	-	-
2003 (N = 59)	1.9; 5.3; (0.49-71.8)	-	-	-	-
Total male (N = 325)	3.7; 16.2; (NA)	-	-	-	-
Total female (N = 307)	4.6; 20.3; (NA)	-	-	-	-
Overall total (N = 632)	4.1; 19.1; (0.22-	-	-	-	-

Wittassek and Angerer (2008)

Germany: Calculated from urinary metabolite data for MBP;
N = 102

Age 6 to 80 y:

2.1 (median); 230 (maximum) - -

Children: N = 239

Age 2 to 14 y:

Creatinine-based model

- 4.1 (median); 76.4 (maximum) -

Volume-based model

- 7.6 (median); 110 (maximum) -

CDC (2005)^a

USA (NHANES 2001-2002): Calculated from urinary
metabolite data for MBP; data format: geo mean (95th %)

N = 2772

Age 6+ y: Total: 0.65 (3.0); Male: 0.60 (2.5); Female:
0.71 (3.0) - -

N = 1638

Age 20+ y: 0.58 - - -
(2.6)

N = 742

- Age 12 to 19 y: - - -
0.39 (1.8)

N = 392

- - Age 6 to 11 y: - - -
0.71 (2.9)

Marsee et al. (2006)

USA (2000-2003): pregnant women (N = 214): Calculated
from urinary metabolite data for MBP

0.84 (median); 2.33 - - -
(95th %)

CDC (2003)^a

USA (NHANES 1999-2000): Calculated from urinary
metabolite data for MBP + MiBP; data format: geo mean
(95th %)

N = 2541

Age 6+ y: Total: 0.81 (3.5); Male: 0.72 (2.7); Female:
0.93 (4.3) - - -

N = 1461

Age 20+ y: 0.74 - - -
(3.3)

N = 752

- Age 12 to 19 y: - - -
0.49 (1.8)

N = 328

- - Age 6 to 11 y: - - -
0.84 (3.2)

Brock et al. (2002)^a

USA (2000): Intake calculated from urinary metabolite data
for MBP; 19 children; 30 samples

- - - Age 11.8 to
16.5 months:
2.45 (geo
mean); 16.6
(95th %)

David (2000)

Age 20 to 60 y:

USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MBP (Blount, <i>et al.</i> 2000); N = 289	1.56 (geo mean); 6.87 (95th %)	-	-	-	-
Kohn <i>et al.</i> (2000) USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MBP (Blount, <i>et al.</i> 2000); N = 289	Age 20 to 60 y: 1.5 (median); 7.2 (95th %)	-	-	-	-
Huang <i>et al.</i> (2006) Taiwan (undated): Calculated from urinary metabolite data for MBP; pregnant women; N = 28	9.28 (median)	-	-	-	-
Chen <i>et al.</i> (2008) Taiwan (undated): Calculated from urinary metabolite data for MBP; N = 60 (41 female, 18 male)	Age 21 to 67 y: 2.2 (median); nd to 23.5 (range)	-	-	-	-

NOTES:

a - Daily intake calculated from reported urinary metabolite data, as described in text.

NA - Not available

nd - Not detected

TABLE 7
DiBP EXPOSURE ESTIMATES

STUDY	DiBP INTAKE ($\mu\text{gkg}^{-1}\text{d}^{-1}$)				
	ADULT	TEEN	CHILD	TODDLER	INFANT
Present evaluation					
Using method described in Clark <i>et al.</i> (2003b) and concentrations in Table 2. Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years. Data format: median (95th %)	Age 20 to 70 y: 0.76 (1.6)	Age 12 to 19 y: 0.98 (2.2)	Age 5 to 11 y: 2.1 (4.8)	Age 0.5 to 4y: 2.6 (6.2)	Age 0 to 0.5 y: 1.3 (5.5)
Wormuth <i>et al.</i> (2006) + suppl data					
Europe: based on oral, inhalation, and dermal exposure pathways, including consumer products; data format = low, intermediate, high estimate; F = female; M =male	Age 18 to 80 y: F: 0.03; 0.45; 1.61 M: 0.03; 0.50; 1.82	Age 11 to 18 y: F: 0.05; 0.30; 0.98 M: 0.06; 0.40; 1.27	Age 4 to 10 y: 0.04; 0.39; 1.55	Age 1 to 3 y: 0.07; 0.69; 2.44	Age 0 to 1 y 0.16; 1.53; 4.73
Fromme <i>et al.</i> (2007a and b)					
Germany (2005): N = 50 (27 female + 23 male)	Age 14 to 60 y:				
Calculated from composite dietary samples collected over 7 days	0.57 (median); 2.14 (95th %); 0.23-3.47 (range)		-	-	-
Calculated from urinary metabolite data for MiBP; data format: median (95th %)	Total: 1.7 (5.2)		-	-	-
	Female: 1.6 (4.7); Male: 1.8 (5.3)		-	-	-
Wittassek <i>et al.</i> (2007b)					
Germany: Calculated from urinary metabolite data for MiBP; male and female adults; data format: median; 95th %; (range)	Age 20 to 29 y:				
1988 (N = 60)	1.1; 3.6; (0.27-6.2)	-	-	-	-
1989 (N = 60)	1.0; 4.2; (0.30-12.9)	-	-	-	-
1991 (N = 60)	1.2; 8.7; (0.36-20.2)	-	-	-	-
1993 (N = 60)	1.2; 2.8; (0.39-4.8)	-	-	-	-
1996 (N = 145)	1.6; 8.4; (0.45-29.0)	-	-	-	-
1998 (N = 68)	1.4; 5.8; (0.10-12.2)	-	-	-	-
1999 (N = 60)	1.5; 4.4; (0.41-15.1)	-	-	-	-
2001 (N = 60)	1.6; 4.6; (0.29-12.6)	-	-	-	-
2003 (N = 59)	1.4; 3.9; (0.46-5.2)	-	-	-	-
Total male (N = 325)	1.3; 4.8; (NA)	-	-	-	-

Total female (N = 307)	1.4; 6.6; (NA)	-	-	-	-
Overall total (N = 632)	1.4; 5.7; (0.10-29.0)	-	-	-	-
Wittassek and Angerer (2008)					
Germany: Calculated from urinary metabolite data for MiBP; N = 102		Age 6 to 80 y: 1.5 (median); 27.3 (maximum)		-	-
CDC (2005)^a					
USA (NHANES 2001-2002): Calculated from urinary metabolite data for MiBP; data format: geo mean (95th %)					
N = 2772	Age 6+ y: Total: 0.09 (0.44); Male: 0.09 (0.46); Female: 0.09 (0.44)			-	-
N = 1638	Age 20+ y: 0.08 (0.38)	-	-	-	-
N = 742	-	Age 12 to 19 y: 0.05 (0.26)	-	-	-
N = 392	-	-	Age 6 to 11 y: 0.10 (0.49)	-	-
Marsee et al. (2006)					
USA (2000-2003): pregnant women (N = 214): Calculated from urinary metabolite data for MiBP	0.12 (median); 0.41 (95th %)	-	-	-	-

NOTES:

a - Daily intake calculated from reported urinary metabolite data, as described in text.

NA - Not available

TABLE 8
BBP EXPOSURE ESTIMATES

STUDY	BBP INTAKE ($\mu\text{kg}^{-1}\text{d}^{-1}$)				
	ADULT	TEEN	CHILD	TODDLER	INFANT
Present evaluation					
Update to Clark <i>et al.</i> (2003b), using concentrations in Table 2. Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years. Data format: median (95th %)	Age 20 to 70 y: 0.50 (1.4)	Age 12 to 19 y: 0.49 (1.9)	Age 5 to 11 y: 0.97 (4.0)	Age 0.5 to 4y: 1.5 (6.1)	Age 0 to 0.5 y: 0.51 (6.1) formula-fed; 0.53 (6.1) breast-fed
Clark <i>et al.</i> (2003b)					
Based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years	Age 20 to 70 y: 3.7 (median)	Age 12 to 19 y: 5.7 (median)	Age 5 to 11 y: 7.9 (median)	Age 0.5 to 4y: 9.3 (median)	Age 0 to 0.5 y: 1.5 (median)
Wormuth <i>et al.</i> (2006) + suppl data					
Europe: based on oral, inhalation, and dermal exposure pathways, including consumer products; data format = low, intermediate, high estimate; F = female; M =male	Age 18 to 80 y: F: 0.02; 0.24; 2.62 M: 0.02; 0.26; 2.97	Age 11 to 18 y: F: 0.02; 0.11; 2.24 M: 0.02; 0.13; 2.76	Age 4 to 10 y: 0.01; 0.13; 1.68	Age 1 to 3 y: 0.02; 0.44; 5.89	Age 0 to 1 y 0.06; 1.16; 11.70
Wilson <i>et al.</i> (2003)					
USA (1997): Based on ingestion of food (composite samples), dust, and soil and inhalation of indoor and outdoor air	-	-	-	Age 2 to 5 y: 1.9 (mean); 0.744 to 2.88 (range)	-
Tsumura <i>et al.</i> (2003)					
Japan (2001): Based on total diet study of hospital food; calculated using body weight of 50 kg.	0.068	-	-	-	-
Tsumura <i>et al.</i> (2001a)					
Japan (1999): Based on total diet study of hospital food; calculated using body weight of 50 kg	0.094	-	-	-	-
Itoh <i>et al.</i> (2007)					
Japan: Based on ingestion of food and inhalation of indoor air; data compiled from various sources	0.062 to 0.083 (range of means)	-	-	-	-
Calculated from urinary metabolite data for MBzP (2004);	0.093 (mean)	-	-	-	-

N = 35

Fromme et al. (2007a and b)

Germany (2005): N = 50 (27 female + 23 male)
 Calculated from composite dietary samples collected over 7 days
 Calculated from urinary metabolite data for MBzP; data format: median (95th %)

Age 14 to 60 y:
 0.23 (median); 0.38 (95th %); 0.11-0.50 (range) - - -
 Total: 0.2 (1.2) - - -
 Female: 0.2 (1.5); Male: 0.2 (1.0) - - -

Fromme et al. (2007b)

Germany (2002: Koch et al 2003a): N = 85
 Calculated from urinary metabolite data for MBzP; data format: median (95th %)

Age 7 to 63 y:
 Female: 0.6 (2.5); Male: 0.5 (2.4) - -

Wittassek and Angerer (2008)

Germany: Calculated from urinary metabolite data for MBzP; N = 102

Age 6 to 80 y:
 0.3 (median); 2.2 (maximum) - -

Children: N = 239

Creatinine-based model
 Volume-based model

Age 2 to 14 y:
 0.42 (median); 13.9 (maximum) - -
 0.77 (median); 31.3 (maximum) - -

Wittassek et al. (2007b)

Germany: Calculated from urinary metabolite data for MBzP; male and female adults; data format: median; 95th %; (range)

Age 20 to 29 y:
 1988 (N = 60) 0.25; 0.77; (0.02-6.6) - - -
 1989 (N = 60) 0.30; 2.2; (0.07-2.8) - - -
 1991 (N = 60) 0.43; 1.6; (0.11-2.8) - - -
 1993 (N = 60) 0.27; 1.9; (0.07-2.2) - - -
 1996 (N = 145) 0.29; 5.5; (0.04-27.3) - - -
 1998 (N = 68) 0.22; 1.4; (0.01-4.0) - - -
 1999 (N = 60) 0.21; 3.7; (0.03-10.9) - - -
 2001 (N = 60) 0.22; 0.75; (0.02-0.99) - - -
 2003 (N = 59) 0.22; 0.91; (0.05-1.74) - - -
 Total male (N = 325) 0.25; 1.9; (NA) - - -
 Total female (N = 307) 0.28; 1.5; (NA) - - -
 Overall total (N = 632) 0.26; 1.6; (0.01-27.3) - - -

CDC (2005)^a

USA (NHANES 2001-2002): Calculated from urinary metabolite data for MBzP; data format: geo mean (95th %)

N = 2772	Age 6+ y: Total: 0.47 (3.0); Male: 0.49 (3.1); Female: 0.47 (2.9)	-	-
N = 1638	Age 20+ y: 0.40 (2.2)	-	-
N = 742	-	Age 12 to 19 y: 0.33 (1.8)	-
N = 392	-	-	Age 6 to 11 y: 0.70 (3.6)
Marsee et al. (2006)			
USA (2000-2003): pregnant women (N = 214): Calculated from urinary metabolite data for MBzP	0.50 (median); 2.47 (95th %)	-	-
Brock et al. (2002) ^a			
USA (2000): Intake calculated from urinary metabolite data for MBzP; 19 children; 30 samples	-	-	Age 11.8 to 16.5 months: 1.5 (geo mean); 6.4 (95th %)
CDC (2003) ^a			
USA (NHANES 1999-2000): Calculated from urinary metabolite data for MBzP; data format: geo mean (95th %)			
N = 2541	Age 6+ y: Total: 0.47 (2.6); Male: 0.49 (2.8); Female: 0.46 (2.4)	-	-
N = 1461	Age 20+ y: 0.39 (1.9)	-	-
N = 752	-	Age 12 to 19 y: 0.32 (1.3)	-
N = 328	-	-	Age 6 to 11 y: 0.73 (2.6)
David (2000)			
USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MBzP (Blount, <i>et al.</i> 2000); N = 289	Age 20 to 60 y: 0.73 (geo mean); 3.34 (95th %)	-	-
Kohn et al. (2000)			
USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MBzP (Blount, <i>et al.</i> 2000); N = 289	Age 20 to 60 y: 0.88 (median); 4.0 (95th %)	-	-
Huang et al. (2006)			
Taiwan (undated): Calculated from urinary metabolite data for MBzP; pregnant women; N = 28	<0.1 (median)	-	-
Chen et al. (2008)			
Taiwan (undated): Calculated from urinary metabolite data for MBzP; N = 60 (41 female, 18 male)	Age 21 to 67 y: 0.2 (median); nd to 1.6 (range)	-	-

NOTES:

a - Daily intake calculated from reported urinary metabolite data, as described in text.

NA - Not available
nd - Not detected

TABLE 9
DEHP EXPOSURE ESTIMATES

STUDY	DEHP INTAKE ($\mu\text{gkg}^{-1}\text{d}^{-1}$)				
	ADULT	TEEN	CHILD	TODDLER	INFANT
Present evaluation					
Update to Clark <i>et al.</i> (2003b), using concentrations in Table 2. Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years. Data format: median (95th %)	Age 20 to 70 y: 11 (31)	Age 12 to 19 y: 11 (42)	Age 5 to 11 y: 20 (81)	Age 0.5 to 4y: 30 (124)	Age 0 to 0.5 y: 5.0 (27) formula-fed; 16 (66) breast-fed
Clark <i>et al.</i> (2003b)					
Based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years	Age 20 to 70 y: 8.2 (median)	Age 12 to 19 y: 10 (median)	Age 5 to 11 y: 19 (median)	Age 0.5 to 4y: 26 (median)	Age 0 to 0.5 y: 5.0 (formula-fed); 7.3 (breast-fed) (median)
Wormuth <i>et al.</i> (2006) + suppl data					
Europe: based on oral, inhalation, and dermal exposure pathways, including consumer products; data format = low, intermediate, high estimate; F = female; M =male	Age 18 to 80 y: F: 0.23; 2.06; 11.39 M: 0.26; 2.25; 12.93	Age 11 to 18 y: F: 0.10; 1.25; 10.40 M: 0.14; 1.68; 14.25	Age 4 to 10 y: 0.17; 2.00; 14.51	Age 1 to 3 y: 0.24; 4.91; 47.23	Age 0 to 1 y 0.54; 12.33; 106.67
Franco <i>et al.</i> (2007)					
Based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years	5.6 (median)	-	-	-	-
Based on ingestion of leaf and root crops, fish, beef, dairy, drinking water, and inhalation of outdoor air using the EUSES model and data from the Netherlands	0.68 (median)	-	-	-	-
Jensen and Knudsen (2006)					
Denmark: estimated intake due to exposure to consumer products and dust indoors	-	-	-	10-20 (typical); 50-250 (worst case)	-
Tsumura, <i>et al.</i> (2003)					
Japan (2001): Based on total diet study of hospital food; calculated using body weight of 50 kg.	3.2	-	-	-	-
Tsumura, <i>et al.</i> (2001a)					

Japan (1999): Based on total diet study of hospital food; calculated using body weight of 50 kg	10.4	-	-	-	-
Itoh et al. (2007)					
Japan:					
Based on ingestion of food and inhalation of indoor air; data compiled from various sources	2.1 to 2.8 (range of means)	-	-	-	-
Calculated from urinary metabolite data for MEHP (2004); N = 35	2.7 (mean)	-	-	-	-
Fujimaki et al. (2006)					
Japan (2003): pregnant women; N = 40	median (range)				
Calculated from urinary metabolite data: MEHP	10.4 (3.45-41.6)	-	-	-	-
Calculated from urinary metabolite data: MEOHP	4.55 (0.66-17.9)	-	-	-	-
Calculated from urinary metabolite data: MEHHP	3.51 (1.47-8.57)	-	-	-	-
Fromme et al. (2007a and b)					
Germany (2005): N = 50 (27 female + 23 male)	Age 14 to 60 y:				
Calculated from composite dietary samples collected over 7 days	2.43 (median); 3.95 (95th %); 1.0-4.80 (range)	-	-	-	-
Calculated from urinary metabolite data: MEHP	Total: 2.2 (median); 7.2 (95th %)	-	-	-	-
	Female: 1.9 (7.1); Male: 2.4 (7.6)	-	-	-	-
Calculated from urinary metabolite data: MEOHP	Total: 2.3 (median); 7.2 (95th %)	-	-	-	-
	Female: 2.3 (8.2); Male: 2.5 (6.5)	-	-	-	-
Calculated from urinary metabolite data: MEHHP	Total: 2.0 (median); 6.5 (95th %)	-	-	-	-
	Female: 1.7 (7.0); Male: 2.3 (6.0)	-	-	-	-
Fromme et al. (2007b)					
Germany (2002: Koch et al 2003a): Age 7 to 63 y; N = 85	median (95th %):				
Calculated from urinary metabolite data: MEHP	Female: 4.0 (14.8); Male: 4.5 (20.5)	-	-	-	-
Calculated from urinary metabolite data: MEOHP	Female: 4.8 (16.2); Male: 6.3 (23.3)	-	-	-	-
Calculated from urinary metabolite data: MEHHP	Female: 3.7 (14.2); Male: 5.9 (23.6)	-	-	-	-
Wittassek et al. (2007b)					
Germany: Calculated from sum of urinary metabolite data for MEHHP + MEOHP + MECPP + MCMHP + MEHP; male and female adults 20 to 29 y	median; 95th %; (range)				
1988 (N = 60)	3.9; 9.9; (0.78-39.8)	-	-	-	-

1989 (N = 60)	4.2; 10.0; (0.84-33.6)	-	-	-	-
1991 (N = 60)	4.0; 18.8; (1.2-23.6)	-	-	-	-
1993 (N = 60)	4.2; 12.9; (1.4-14.1)	-	-	-	-
1996 (N = 145)	3.7; 13.4; (0.76-30.4)	-	-	-	-
1998 (N = 68)	3.1; 8.1; (0.19-10.9)	-	-	-	-
1999 (N = 60)	2.7; 9.6; (1.0-13.9)	-	-	-	-
2001 (N = 60)	3.1; 7.4; (1.1-20.1)	-	-	-	-
2003 (N = 59)	2.4; 5.7; (0.82-7.1)	-	-	-	-
Total male (N = 325)	3.4; 10.2; (NA)	-	-	-	-
Total female (N = 307)	3.5; 10.5; (NA)	-	-	-	-
Overall total (N = 632)	3.5; 10.1; (0.19-39.8)	-	-	-	-

Wittassek and Angerer (2008)

Germany: Calculated from urinary metabolite data for MEHHP + MEOHP + MECPP + MCMHP + MEHP; N = 102	Age 6 to 80 y: 2.7 (median); 42.2 (maximum)	-	-	-	-
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Wittassek et al. (2007a)

Germany: Calculated from urinary metabolite data for MEHHP + MEOHP + MECPP + MCMHP + MEHP; Children: N = 239 (paper contains additional breakdown of data by age and gender)	Age 2 to 14 y:				
Creatinine-based model	-	4.3 (median); 15.2 (95th %); 0.6 - 140 (range)			-
Volume-based model	-	7.8 (median); 25.2 (95th %); 0.4 - 409 (range)			-

Calafat and McKee (2006)

USA (NHANES 2001-2002: CDC, 2005); data format: geo mean (95th %)	Age 6 to > 20 y: (N = 2772)				
Calculated from urinary metabolite data: MEHP	0.9 (7.1)				-
Calculated from urinary metabolite data: MEHHP	2.1 (16.8)				-
Calculated from urinary metabolite data: MEOHP	2.2 (15.6)				-
	Age 12 to 19 y: (N = 742)	Age 6 to 11 y: (N = 392)			
Calculated from urinary metabolite data: MEHP	0.8 (5.5)	0.6 (3.7)			-
Calculated from urinary metabolite data: MEHHP	2.2 (11.6)	2.4 (13.2)			-
Calculated from urinary metabolite data: MEOHP	2.4 (12.6)	2.6 (12.8)			-
Germany (2001-2002: Becker et al., 2004); data format: geo mean (95th %)	Age 3 to 14 y: (N = 254)				
Calculated from urinary metabolite data: MEHP	-	0.7 (2.8)			-
Calculated from urinary metabolite data: MEHHP	-	2.6 (10.7)			-

Calculated from urinary metabolite data: MEOHP Marsee et al. (2006)	-		3.1 (11.7)	-
USA (2000-2003): pregnant women (N = 214)	median (95th %):			
Calculated from urinary metabolite data: MEHP	2.37; (16.8)	-	-	-
Calculated from urinary metabolite data: MEHHP	1.33; (9.11)	-	-	-
Calculated from urinary metabolite data: MEOHP Brock et al. (2002) ^a	2.00; (12.8)			
			Age 11.8 to 16.5 months :	
USA (2000): Intake calculated from urinary metabolite data for MEHP; 19 children; 30 samples	-	-	-	1.8 (geo mean); 7.0 (95th %)
CDC (2003) ^a				
USA (NHANES 1999-2000): Calculated from urinary metabolite data for MEHP; data format: geo mean (95th %) N = 2541	Age 6+ y: Total: 0.73 (4.3); Male: 0.78 (5.8); Female: 0.71 (3.4)	-	-	-
N = 1461	Age 20+ y: 0.71 (4.1)	-	-	-
N = 752	-	Age 12 to 19 y: 0.33 (1.6)	-	-
N = 328	-	-	Age 6 to 11 y: 0.67 (5.4)	-
David (2000)	Age 20 to 60 y:			
USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MEHP (Blount, <i>et al.</i> 2000); N = 289	0.60 (geo mean); 3.05 (95th %)	-	-	-
Kohn et al. (2000)	Age 20 to 60 y:			
USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MEHP (Blount, <i>et al.</i> 2000); N = 289	0.71 (median); 3.6 (95th %)	-	-	-
Huang et al. (2006)				
Taiwan (undated): Calculated from urinary metabolite data for MEHP; pregnant women; N = 28	5.17 (median)	-	-	-
Chen et al. (2008)	Age 21 to 67 y:			
Taiwan (undated): Calculated from urinary metabolite data for MEHP; N = 60 (41 female, 18 male)	33.9 (median); 0.1 to 309.6 (range)	-	-	-

NOTES:

a - Daily intake calculated from reported urinary metabolite data, as described in text. One half detection limit used for non-detect results.

NA - Not available

TABLE 10
DiNP EXPOSURE ESTIMATES

STUDY	DiNP INTAKE ($\mu\text{gkg}^{-1}\text{d}^{-1}$)				
	ADULT	TEEN	CHILD	TODDLER	INFANT
Present evaluation					
Using method described in Clark <i>et al.</i> (2003b) and concentrations in Table 2. Median intake, based on ingestion of food, drinking water, dust/soil, and inhalation of air using data compiled from various countries and various years. Data format: median (95th %)	Age 20 to 70 y: 0.67 (2.0)	Age 12 to 19 y: 0.67 (2.6)	Age 5 to 11 y: 1.3 (5.5)	Age 0.5 to 4y: 2.1 (8.7)	Age 0 to 0.5 y: 0.76 (9.9)
Wormuth <i>et al.</i> (2006) + suppl data					
Europe: based on oral, inhalation, and dermal exposure pathways, including consumer products; data format = low, intermediate, high estimate; F = female; M =male	Age 18 to 80 y: F: 0.01; 0.01; 0.26 M: 0.01; 0.01; 0.28	Age 11 to 18 y: F: 0.01; 0.01; 0.24 M: 0.01; 0.01; 0.29	Age 4 to 10 y: 0.00; 0.14; 6.22	Age 1 to 3 y: 0.01; 5.16; 75.34	Age 0 to 1 y 0.02; 16.03; 152.40
Tsumura <i>et al.</i> (2003)					
Japan (2001): Based on total diet study of hospital food; calculated using body weight of 50 kg.	0.094	-	-	-	-
Tsumura <i>et al.</i> (2001a)					
Japan (1999): Based on total diet study of hospital food; calculated using body weight of 50 kg	1.3	-	-	-	-
Gill <i>et al.</i> (2001)					
Estimates compiled from various sources					
Exposure due to mouthing of children's products	-	-	-	Age 1 to 3 y: 39 (average); 5-228 (range)	Age 0.3 to 0.5 y: 73.9 (95th %)
All sources other than mouthing children's products	-	-	-	Age 0.3 to 3 y: 50 (average)	-
Fromme <i>et al.</i> (2007b)					
Germany (2005): N = 50 (27 female + 23 male)		Age 14 to 60 y:			
Calculated from urinary metabolite data: MHiNP		Total: 0.7 (median); 3.5 (95th %)	-	-	-
		Female: 0.6 (3.5); Male: 0.8 (3.5)	-	-	-
Wittassek <i>et al.</i> (2007b)					

Germany: Calculated from sum of urinary metabolite data for MOiNP + MHiNP; male and female adults; data format: median; 95th %; (range)

	Age 20 to 29 y:				
1988 (N = 60)	0.20; 1.4; (0.04-2.2)	-	-	-	-
1989 (N = 60)	0.24; 2.2; (0.03-12.9)	-	-	-	-
1991 (N = 60)	0.22; 4.5; (0.05-20.2)	-	-	-	-
1993 (N = 60)	0.27; 1.7; (0.04-2.6)	-	-	-	-
1996 (N = 145)	0.33; 1.6; (0.02-3.4)	-	-	-	-
1998 (N = 68)	0.30; 7.8; (0.06-11.7)	-	-	-	-
1999 (N = 60)	0.32; 1.9; (0.05-3.1)	-	-	-	-
2001 (N = 60)	0.34; 2.3; (0.10-4.4)	-	-	-	-
2003 (N = 59)	0.40; 1.5; (0.12-3.2)	-	-	-	-
Total male (N = 325)	0.27; 1.7; (NA)	-	-	-	-
Total female (N = 307)	0.32; 1.7; (NA)	-	-	-	-
Overall total (N = 632)	0.29; 1.7; (0.03-20.2)	-	-	-	-

Wittassek and Angerer (2008)

Germany: Calculated from urinary metabolite data for MiNP + MOiNP + MHiNP + MCiNP; N = 102

Age 6 to 80 y:

0.6 (median); 36.8 (maximum) - -

CDC (2003)^a

USA (NHANES 1999-2000): Calculated from urinary metabolite data for MiNP; 95th %

Age 6+ y (N = 2541): Total: 6.1; Male: 7.0; Female: 5.5 - -

Age 20+ y (N = 1461): 6.6 Age 12 to 19 y (N = 752): 1.5 Age 6 to 11 y (N = 328): 4.7 - -

David (2000)

Age 20 to 60 y:

USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MiNP (Blount *et al.* 2000); N = 289

0.21 (geo mean); 1.08 (95th %) - -

Kohn *et al.* (2000)

Age 20 to 60 y:

USA (1988-1994; NHANES III). Intake calculated from urinary metabolite data for MiNP (Blount *et al.* 2000); N = 289

1.7 (95th %) - -

NOTES:

a - Daily intake calculated from reported urinary metabolite data, as described in text.

NA - Not available