

表1 油症検診受診者血中ダイオキシン類濃度調査結果 (2015年)

(pg/g lipid)

	2015年検診結果								一般の人			
	認定(N=104)				未認定(N=116)				(2004年, N=127)			
Congeners	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max
2,3,7,8-TCDD	1.8	1.2	ND	7.0	1.1	0.78	ND	3.5	1.9	0.84	ND	4.3
1,2,3,7,8-PeCDD	8.5	6.0	ND	34	5.1	3.5	ND	15	9.0	3.4	3.2	20
1,2,3,4,7,8-HxCDD	3.3	2.1	ND	10	2.3	2.1	ND	12	3.6	1.9	ND	13
1,2,3,6,7,8-HxCDD	38	50	ND	320	17	13	ND	94	28	11	7.3	70
1,2,3,7,8,9-HxCDD	4.6	3.3	ND	17	2.9	2.7	ND	14	4.5	2.8	ND	16
1,2,3,4,6,7,8-HpCDD	51	31	8.3	140	34	62	3.6	640	78	55	18	470
OCDD	490	320	97	1500	380	690	37	6200	1200	640	180	7600
Total PCDDs	600	370	122	1800	440	760	54	6900	1300	1000	210	8200
2,3,7,8-TCDF	5.8	12	ND	83	1.5	2.0	ND	19	1.0	0.72	ND	4.5
1,2,3,7,8-PeCDF	1.9	2.0	ND	13	0.79	1.0	ND	8.6	0.67	0.55	ND	4.6
2,3,4,7,8-PeCDF	94	170	ND	1200	13	9	2.2	47	17	7.7	6.0	36
1,2,3,4,7,8-HxCDF	27	78	ND	530	3.2	2.1	ND	9.5	5.0	2.7	ND	20
1,2,3,6,7,8-HxCDF	12	25	ND	170	3.4	2.1	ND	12	5.7	2.6	ND	16
2,3,4,6,7,8-HxCDF	1.2	0.68	ND	5.6	1.1	0.29	ND	2.6	1.2	0.8	ND	5.2
1,2,3,7,8,9-HxCDF	ND				ND				ND			
1,2,3,4,6,7,8-HpCDF	2.3	2.5	ND	20	1.6	1.2	1.0	8.4	2.2	2.1	ND	14
1,2,3,4,7,8,9-HpCDF	ND				ND				ND			
OCDF	ND				ND				2.1	1.4	ND	18
Total PCDFs	160	280	12	1900	29	14	11	79	37	14	15	86
344'5-TCB(81)	6.1	5.5	ND	48	5.3	2.0	ND	20	5.6	2.3	ND	24
33'44'-TCB(77)	14	16	ND	130	6.6	4.8	ND	40	8.4	4.8	ND	31
33'44'5-PenCB(126)	103	83	13.9	460	75	86	ND	450	110	80	17	520
33'44'55'-HxCB(169)	183	197	15.5	1225	71	64	ND	380	64	27	16	190
Total Non-ortho PCBs	305	265	41	1542	158	147	20	790	190	110	59	740
Total	1054	747	191	4824	631	828	128	7278	1600	1000	290	8500
◆【WHO-98】◆												
PCDDs-TEQ	15	12	2.9	76	9	5.7	1.5	30	15	5.7	5.0	34
PCDFs-TEQ	52	97	2.0	647	7.6	4.9	1.6	26	10	4.3	3.5	33
Non-ortho PCBs-TEQ	12	9.6	1.69	49	8.2	9.2	0.55	48	12	8.2	2.0	54
Total TEQ	80	113	7.7	772	25	18	3.7	92	37	16	12	100
◆【WHO-05】◆												
PCDDs-TEQ	16	11.9	2.9	76	9	5.8	1.5	30	16	5.9	5.1	35
PCDFs-TEQ	33	62	1.4	417	5.0	3.1	1.1	17	6.6	2.5	2.3	14
Non-ortho PCBs-TEQ	16	13	2.0	71	10	10	0.7	53	13	8.6	2.6	58
Total TEQ	64	82	7.7	564	24	17	3.4	91	37	16	12	100
Lipid(%)	0.28	0.06	0.16	0.51	0.29	0.06	0.13	0.42	0.33	0.05	0.22	0.49

表2 油症認定患者及び一般人の血中PCDDs、PCDFs及びノンオルソPCB濃度測定結果  
(2001-2015年)

Congeners	油症患者(N=941)					一般人(N=127、2004年)				
	Mean	SD	Min	Max	Median	Mean	SD	Min	Max	Median
2,3,7,8-TCDD	1.6	1.1	ND	8.6	1.4	1.9	0.84	ND	4.3	1.8
1,2,3,7,8-PeCDD	9.2	5.8	ND	48	7.9	9.0	3.4	3.2	20	8.7
1,2,3,4,7,8-HxCDD	2.5	1.9	ND	15	2.2	3.6	1.9	ND	13	3.2
1,2,3,6,7,8-HxCDD	37	37	ND	320	25	28	11	7.3	70	25
1,2,3,7,8,9-HxCDD	3.7	3.3	ND	36	3.0	4.5	2.8	ND	16	3.9
1,2,3,4,6,7,8-HpCDD	43	52	ND	1200	34	78	55	18	470	62
OCDD	590	552	72	7900	470	1200	640	180	7600	940
Total PCDDs	690	607	100	9200	570	1300	1000	210	8200	1000
2,3,7,8-TCDF	2.2	4.9	ND	83	1.2	1.0	0.72	ND	4.5	ND
1,2,3,7,8-PeCDF	1.1	1.2	ND	13	0.5	0.67	0.55	ND	4.6	ND
2,3,4,7,8-PeCDF	120	187	2.8	1800	37	17	7.7	6.0	36	16
1,2,3,4,7,8-HxCDF	27	57	ND	580	6.7	5.0	2.7	ND	20	4.4
1,2,3,6,7,8-HxCDF	12	19	ND	170	5.8	5.7	2.6	ND	16	5.2
2,3,4,6,7,8-HxCDF	1.2	0.78	ND	8.7	ND	1.2	0.8	ND	5.2	ND
1,2,3,7,8,9-HxCDF	ND					ND				
1,2,3,4,6,7,8-HpCDF	2.3	3.5	ND	74	ND	2.2	2.1	ND	14	ND
1,2,3,4,7,8,9-HpCDF	ND					ND				
OCDF	2.0	1.2	ND	38	ND	2.1	1.4	ND	18	ND
Total PCDFs	170	260	12	2600	62	37	14	15	86	35
344'5'-TCB(#81)	5.6	3.3	ND	49	5	5.6	2.3	ND	24	ND
33'44'-TCB(#77)	8.0	9.7	ND	150	5	8.4	4.8	ND	31	ND
33'44'5'-PenCB(#126)	95	82	ND	680	74	110	80	17	520	90
33'44'55'-HxCB(#169)	170	150	10	1300	130	64	27	16	190	58
Total Non-ortho PCBs	280	200	25	1500	230	190	110	59	740	160
Total	1100	800	170	9700	930	1600	1000	290	8500	1300
◆【WHO-98】◆										
T PCDDs-TEQ	16	10	1.7	77	13	15	5.7	5.0	34	15
T PCDFs-TEQ	62	100	2.0	970	21	10	4.3	3.5	33	10
T Non-ortho PCBs-TEQ	11	9	0.6	77	9	12	8.2	2.0	54	9.5
Total-TEQ	89	110	6.3	1100	48	37	16	12	100	35
◆【WHO-05】◆										
T PCDDs-TEQ	15	9.9	1.8	76	13	16	5.9	5.1	35	11
T PCDFs-TEQ	35	58	1.4	440	12	6.6	2.5	2.3	14	10
T Non-ortho PCBs-TEQ	14	11	0.8	94	12	13	8.6	2.6	58	9.5
Total-TEQ	65	72	6.3	560	41	37	16	12	100	31
Lipid(%)	0.29	0.06	0.16	0.64	0.29	0.33	0.05	0.22	0.49	0.31
Age(years)	65.7	13.5	31	98	66	68.1	5.4	60	86	67

CB: chlorinated biphenyl, CDD: chlorinated dibenzo-p-dioxins, CDF: chlorinated dibenzofurans, Hx: hexa, Hp: hepta, ND: less than the determination limit, OCDD: octachlorodibenzo-p-dioxin, OCDF: octachlorodibenzofurans, PCB: polychlorinated biphenyl, PCDD: polychlorinated dibenzo-p-dioxin, PCDF: polychlorinated dibenzofuran, Pe: penta, TCB: tetrachlorobiphenyl, TCDD: tetrachlorodibenzo-p-dioxin, TCDF: tetrachlorodibenzofuran, TEQ: toxic equivalent quantity.

表3 油症患者、同居家族認定患者の血液中PCDD、PCDF及びノンオルソPCB濃度測定結果

Congeners	油症患者 (同居家族認定を除く、N=853)					同居家族認定者 (N=88)					一般の人 (N=127、2004年)				
	Mean	SD	Mn	Max	Median	Mean	SD	Mn	Max	Median	Mean	SD	Mn	Max	Median
2,3,7,8-TCDD	1.6	1.1	ND	8.6	1.5	1.4	1.2	ND	7.4	1.3	1.9	0.84	ND	4.3	1.8
1,2,3,7,8-PeCDD	9.5	5.9	ND	48	8.2	6.5	3.7	ND	28	6.3	9.0	3.4	3.2	20	8.7
1,2,3,4,7,8-HxCDD	2.5	1.9	ND	15	2.2	2.0	1.5	ND	9.4	ND	3.6	1.9	ND	13	3.2
1,2,3,6,7,8-HxCDD	38	38	ND	320	26	20	14	2.9	91	17	28	11	7.3	70	25
1,2,3,7,8,9-HxCDD	3.8	3.3	ND	36	3.0	3.2	2.9	ND	17	2.3	4.5	2.8	ND	16	3.9
1,2,3,4,6,7,8-HpCDD	44	54	ND	1200	35	39	25	10	170	34	78	55	18	470	62
OCDD	600	570	72	7900	490	420	290	81	1700	320	1200	640	180	7600	940
Total PCDDs	700	630	100	9200	590	490	320	112	1700	370	1300	1000	210	8200	1000
2,3,7,8-TCDF	2.3	5.1	ND	83	1.2	1.1	1.1	ND	7.5	ND	1.0	0.72	ND	4.5	ND
1,2,3,7,8-PeCDF	1.2	1.2	ND	13	ND	0.87	1.0	ND	8.3	ND	0.67	0.55	ND	4.6	ND
2,3,4,7,8-PeCDF	120	190	2.8	1800	42	29	42	3.1	320	16	17	7.7	6.0	36	16
1,2,3,4,7,8-HxCDF	29	60	ND	580	7.6	5.6	10	ND	78	3.2	5.0	2.7	ND	20	4.4
1,2,3,6,7,8-HxCDF	13	20	ND	170	6.3	4.6	5.2	ND	35	3.6	5.7	2.6	ND	16	5.2
2,3,4,6,7,8-HxCDF	1.2	0.78	ND	8.7	ND	1.2	0.67	ND	5.6	ND	1.2	0.8	ND	5.2	ND
1,2,3,7,8,9-HxCDF	1.0	0.10	ND	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3,4,6,7,8-HpCDF	2.3	3.7	ND	74	ND	1.8	2.0	ND	12	ND	2.2	2.1	ND	14	ND
1,2,3,4,7,8,9-HpCDF	1.0	0.1	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OCDF	2.0	1.2	ND	38	ND	ND	ND	ND	ND	ND	2.1	1.4	ND	18	ND
Total PCDFs	180	270	12	2600	70	48	58	12	455	30	37	14	15	86	35
344'-TCB(#81)	5.6	3.5	ND	49	5	5.2	1.6	ND	18	ND	5.6	2.3	ND	24	ND
33'44'-TCB(#77)	8.2	10	ND	150	5	6.1	3.5	ND	23	ND	8.4	4.8	ND	31	ND
33'44'5-PeCB(#126)	97	83	ND	680	76	81	69	ND	390	63	110	80	17	520	90
33'44'55'-HxCB(#169)	170	150	10	1300	130	94	72	12	340	68	64	27	16	190	58
Total Non-ortho PCBs	290	210	25	1500	240	190	130	44	730	150	190	110	59	740	160
Total	1200	820	170	9700	990	720	450	220	2400	590	1600	1000	290	8500	1300
◆【WHO-98】◆															
T PCDDs-TEQ	16	10	1.7	77	14	11	6.3	3.2	48	10	15	5.7	5.0	34	15
T PCDFs-TEQ	67	100	2.0	970	23	16	22	2.0	170	8.7	10	4.3	3.5	33	10
T Non-ortho PCBs-TEQ	11	9	0.6	77	9	9.0	7.5	1.2	42	7.3	12	8.2	2.0	54	9.5
Total-TEQ	94	120	6.3	1100	52	36	33	7.7	260	28	37	16	12	100	35
◆【WHO-05】◆															
T PCDDs-TEQ	16	10	1.8	76	13	11	6.3	3.3	48	10	16	5.9	5.1	35	11
T PCDFs-TEQ	39	60	1.4	440	14	10	14	1.4	110	5.7	6.6	2.5	2.3	14	10
T Non-ortho PCBs-TEQ	15	11	0.8	94	12	11	8.6	2.3	48	8.7	13	8.6	2.6	58	9.5
Total-TEQ	69	74	6.3	560	44	32	26	7.7	210	26	37	16	12	100	31
Lipid(%)	0.29	0.07	0.16	0.64	0.29	0.28	0.05	0.20	0.41	0.27	0.33	0.05	0.22	0.49	0.31
Age(years)	66.4	13.7	31	98	68	58.4	9.7	45	89	57	68.1	5.4	60	86	67

表4 油症患者、未認定者の血液中PCDD、PCDF及びノンオルソPCB濃度測定結果

Congeners	油症患者 (N=941)					未認定者 (N=757)					一般人 (N=127, 2004年)				
	Mean	SD	Mn	Max	Median	Mean	SD	Mn	Max	Median	Mean	SD	Mn	Max	Median
2,3,7,8-TCDD	1.6	1.1	ND	8.6	1.4	1.4	1.0	ND	7.8	1.2	1.9	0.84	ND	4.3	1.8
1,2,3,7,8-PeCDD	9.2	5.8	ND	48	7.9	6.7	4.1	ND	29	6.1	9.0	3.4	3.2	20	8.7
1,2,3,4,7,8-HxCDD	2.5	1.9	ND	15	2.2	2.5	1.8	ND	18	2.2	3.6	1.9	ND	13	3.2
1,2,3,6,7,8-HxCDD	37	37	ND	320	25	21	16	ND	180	17	28	11	7.3	70	25
1,2,3,7,8,9-HxCDD	3.7	3.3	ND	36	3.0	3.5	3.0	ND	28	2.9	4.5	2.8	ND	16	3.9
1,2,3,4,6,7,8-HpCDD	43	52	ND	1200	34	41	38	4	640	34	78	55	18	470	62
OCDD	590	552	72	7900	470	600	500	37	6200	460	1200	640	180	7600	940
Total PCDDs	690	607	100	9200	570	670	530	54	6900	530	1300	1000	210	8200	1000
2,3,7,8-TCDF	2.2	4.9	ND	83	1.2	1.2	1.4	ND	19	ND	1.0	0.72	ND	4.5	ND
1,2,3,7,8-PeCDF	1.1	1.2	ND	13	0.5	0.86	1.0	ND	10	ND	0.67	0.55	ND	4.6	ND
2,3,4,7,8-PeCDF	120	187	2.8	1800	37	24	38	1.3	410	14	17	7.7	6.0	36	16
1,2,3,4,7,8-HxCDF	27	57	ND	580	6.7	5.5	10	ND	140	3.1	5.0	2.7	ND	20	4.4
1,2,3,6,7,8-HxCDF	12	19	ND	170	5.8	4.8	4.3	ND	39	3.7	5.7	2.6	ND	16	5.2
2,3,4,6,7,8-HxCDF	1.2	0.78	ND	8.7	ND	1.2	0.81	ND	9.2	ND	1.2	0.8	ND	5.2	ND
1,2,3,7,8,9-HxCDF	ND	ND	ND	ND	ND	1.0	0.08	ND	3.0	ND	ND	ND	ND	ND	ND
1,2,3,4,6,7,8-HpCDF	2.3	3.5	ND	74	ND	2.2	3.1	ND	46	ND	2.2	2.1	ND	14.2	ND
1,2,3,4,7,8,9-HpCDF	ND	ND	ND	ND	ND	1.0	0.19	ND	6.1	ND	ND	ND	ND	ND	ND
OCDF	2.0	1.2	ND	38	ND	2.0	0.38	ND	9.1	ND	2.1	1.4	ND	18	ND
Total PCDFs	170	260	12	2600	62	44	52	10	490	30	37	14	15	86	35
344'5-TCB(#81)	5.6	3.3	ND	49	5	5.6	3.5	ND	64	ND	5.6	2.3	ND	24	ND
33'44'-TCB(#77)	8.0	9.7	ND	150	5	7.0	7.7	ND	160	ND	8.4	4.8	ND	31	ND
33'44'5-PeCB(#126)	95	82	ND	680	74	88	93	ND	670	58	110	80	17	520	90
33'44'55'-HxCB(#169)	170	150	10	1300	130	81	72	ND	740	61	64	27	16	190	58
Total Non-ortho PCBs	280	200	25	1500	230	180	150	20	960	140	190	110	59	740	160
Total	1100	800	170	9700	930	900	660	128	7300	730	1600	1000	290	8500	1300
◆【WHO-98】◆															
T PCDDs-TEQ	16	10	1.7	77	13	11	6.3	3.2	48	10	15	5.7	5.0	34	15
T PCDFs-TEQ	62	100	2.0	970	21	16	22	2.0	170	8.7	10	4.3	3.5	33	10
T Non-ortho PCBs-TEQ	11	9	0.6	77	9	9.6	9.8	0.6	69	6.6	12	8.2	2.0	54	9.5
Total-TEQ	89	110	6.3	1100	48	34	30	3.4	240	26	37	16	12	100	35
◆【WHO-05】◆															
T PCDDs-TEQ	15	9.9	1.8	76	13	11	6.5	1.5	45	10	16	5.9	5.1	35	11
T PCDFs-TEQ	35	58	1.4	440	12	8	10	0.9	130	5.4	6.6	2.5	2.3	14	10
T Non-ortho PCBs-TEQ	14	11	0.8	94	12	11	11	0.7	75	7.8	13	8.6	2.6	58	9.5
Total-TEQ	65	72	6.3	560	41	30	22	3.3	160	25	37	16	12	100	31
Lipid(%)	0.29	0.06	0.16	0.64	0.29	0.30	0.06	0.13	0.52	0.30	0.33	0.05	0.22	0.49	0.31
Age(years)	65.7	13.5	31	98	66	56.6	18.2	5	90	58	68.1	5.4	60	86	67

図1 油症認定患者の血液中2.3.4.7.8.-PeCDF濃度分布 (n=941)  
(pg/g

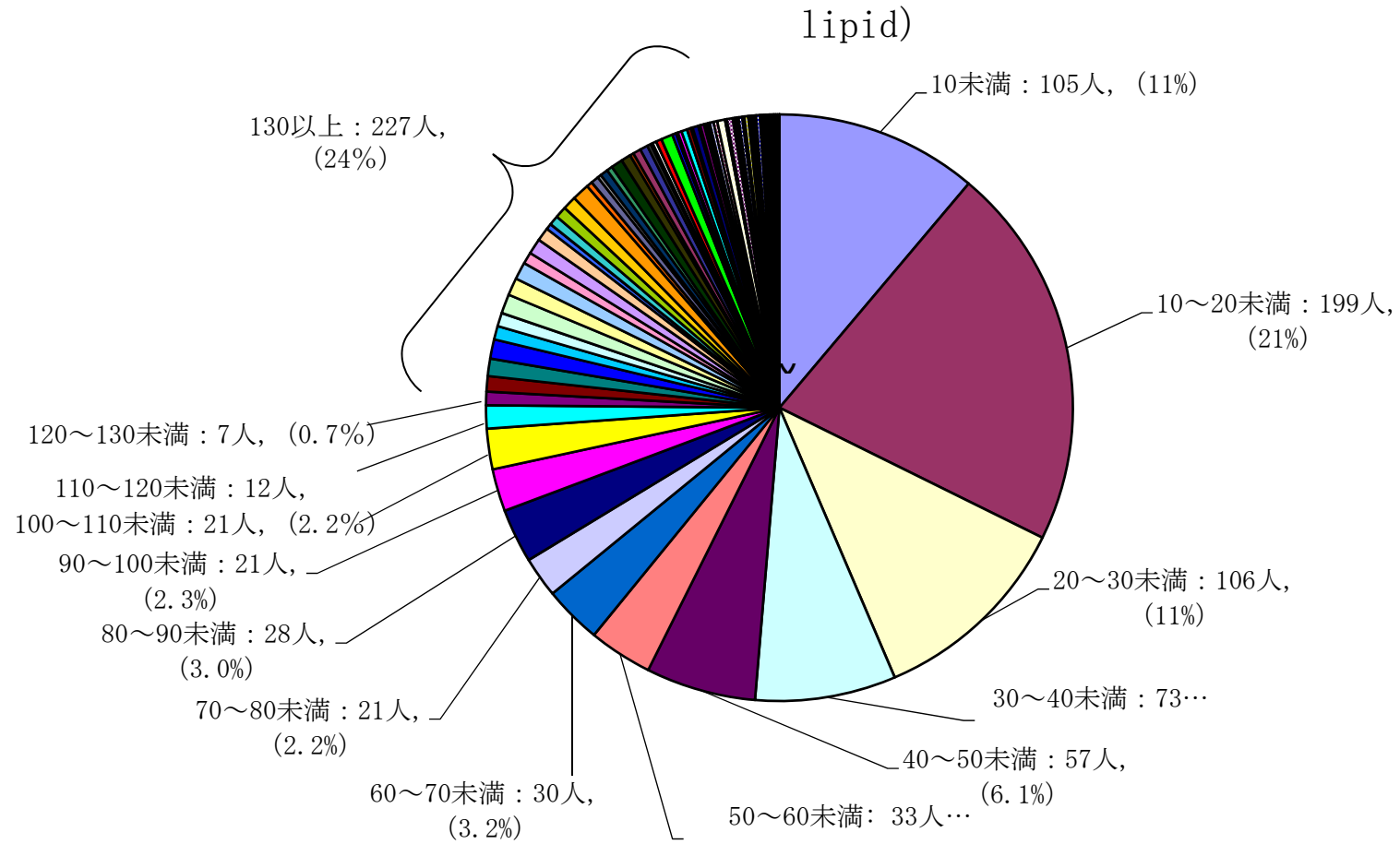


図2 未認定者の血液中2, 3, 4, 7, 8-PCDF濃度 (n=757)  
(pg/g lipid)

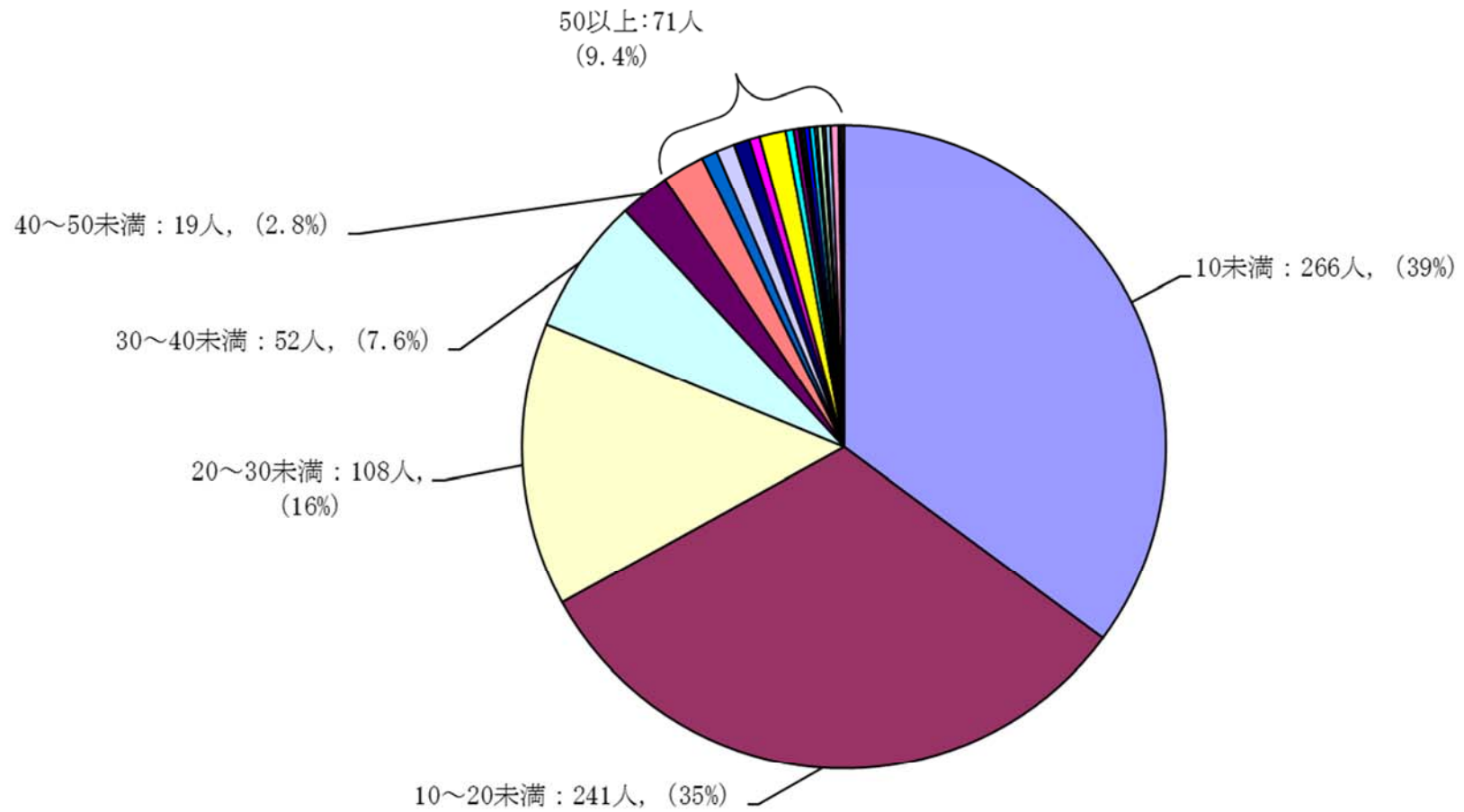


図3 未認定者の検診受診回数(2001-2015年、n=757)

