

1 107. PCBs are a confounding factor in the Faroe Islands study. Murray, 10 Tr.
2 1233:19-1234:5. Like methylmercury, PCBs are an established neurotoxicant. Murray,
3 10 Tr. 1228:2-10; TX 796, p. 3. Prenatal exposure to PCBs was documented to be a
4 confounding factor on the children's performance on the Boston Naming Test in the seven-
5 year-old cohort for whom PCB exposure was measured. Murray, 10 Tr. 1223:26-28; Golub,
6 4 Tr. 408:1-9; TX 34, p. 425; TX 98. Although the initial report from the Faroe Islands
7 study found a correlation between neuropsychological developmental defects and
8 methylmercury exposure as measured by the Boston Naming Test, when the investigators
9 controlled for concurrent PCB exposure, they found that the correlation between
10 methylmercury exposure and performance deficits on the Boston Naming Test was not
11 significant. Golub, 4 Tr. 408:1-9; Tx 34, p. 425; Tx 98. In other words, the Faroe Study
12 investigators raised doubts about the statistical significance of the methylmercury exposure
13 in the Boston Naming Test because of the PCB confounding factor. Golub, 4 Tr. 408:1-23;
14 Tx. 34, p. 425; Tx 98. Dr. Rice ignored the confounding effects of PCBs, and did not
15 quantify the effects that PCBs had on the Boston Naming test in her proposed MADL. Rice,
16 3 Tr. 213:9-13; TX 8.

17 108. The incomplete PCB data introduced bias, which was not adequately
18 quantified into the results of the Faroe Islands study. Murray, 10 Tr. 1235:2-10; TX 796,
19 p. 1. In the Faroe Islands study the PCB measurements were collected from cord tissue
20 rather than cord blood, the way PCBs are usually measured. Golub, 5 Tr. 529:6-9; TX 34,
21 p. 420. The authors theorized that about half of the PCBs were recovered from the cord
22 tissue and made estimations of exposure based on this assumption. Golub, 5 Tr. 528:16-25;
23 TX 363, p. 307. In a recent attempt to quantify the influence PCBs had on the study
24 endpoints, the Faroe investigators acknowledge that if the error in measurement of the PCBs
25 exceeds 46%, the effects seen in the Faroe Islands are not due to methylmercury at all.
26 Murray, 10 Tr. 1226:28-1227:11; TX 796, p. 16. The investigators' failure to quantify error
27 can cause an overestimate of the mercury effect in the Faroe Islands. Golub, 5 Tr. 515:24-
28 27; Murray, 10 Tr. 1227:2-11; TX 796, p. 16. The authors admit that they assumed an error

1 rate of zero, even though the error rate for the measurement of PCBs is definitely greater
2 than zero. Murray, 10 Tr. 1227:22-1228:1; TX 796, p. 16.

3 109. Another confounding factor in the Faroe Islands study was the fact that rural
4 and urban populations had different availability of food. Whale meat was not available in
5 Tvan, a city on the Faroe Islands where some of the mothers in the study lived while they
6 were pregnant. Murray, 10 Tr. 1229:6-23; TX 796, p. 3. Although the authors noted that the
7 city children had higher scores on the Boston Naming Test than their rural counterparts
8 (where whale meat was available), they did not consider whether the difference was
9 attributable to the lower levels of PCBs and DDT in the city mothers' diets compared to the
10 rural dwelling mothers, a possible explanation for the difference. Murray, 10 Tr. 1229:6-
11 1231:5; TX 796, p. 3.

12 **5. The Faroe Islands Study Does Not Adequately Separate Prenatal**
13 **from Postnatal Effects**

14 110. The Faroe Islands investigators recognized that one of the "shortcomings" of
15 the study was its failure to separate the effects caused by pre- versus postnatal
16 methylmercury exposure. Murray, 10 Tr. 1209:23-25; TX 38, p. AGO 01712. This is a
17 unique requirement under Proposition 65 because most agencies do not separately regulate
18 prenatal and postnatal exposure. Rice, 2 Tr. 96:4-8.

19 111. Children were exposed to methylmercury, PCBs, and DDT prenatally during
20 gestation and postnatally through breast milk and subsequently through their own diet.
21 Murray, 10 Tr. 1169:18-1170:2; 10 Tr. 1222:12-24; 10 Tr. 1223:20-23; 10 Tr. 1241:15-25.
22 The authors made no attempt to quantify the level of mercury in the breast milk and to
23 determine what, if any, effect the postnatal methylmercury exposure had on the children.
24 Murray, 10 Tr. 1222:14-20; TX 34, p. 420. The authors also did not measure postnatal
25 exposure to PCBs through breast milk, even though the authors noted in an earlier paper that
26 an "infant's total intake of PCBs during the nursing period may average up to five percent of
27 the total lifetime exposure and increased susceptibility may augment the risk." Murray,

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