Synthetic musk compounds used in detergents and cosmetics include nitro and polycyclic musk compounds. These compounds are discharged after use via domestic wastewater and sewage treatment plants to the aquatic environment. Quantitative detection of nitro musk and polycyclic musk compounds by GC/HRMS in Danish farmed trout and human milk from primiparous mothers are reported. The polycyclic musk, HHCB, dominated the synthetic musk compounds found in trout samples from 1999 with a median concentration of 5.0 μg/kg fresh weight (n.d.-52.6 μg/kg fresh weight) and in trout samples collected in 2003 and 2004 with a median concentration of 1.2 μg/kg fresh weight (n.d.-28.0 μg/kg fresh weight). It was also found that the concentration of musk xylene in trout sampled at the same fish farms decreased considerably from a median concentration of 5.1 μg/kg fresh weight in 1992 to a median of 0.5 μg/kg fresh weight in 1999 and to a median less than the detection limit (0.23 μg/kg fresh weight) in 2003. HHCB also dominated in Danish human milk samples collected in 1999 with a median concentration of 147 μg/kg fat (38.0-422 μg/kg fat). Human dietary intake assessment and body burden calculations on data from 1999 indicate that the main source of exposure to human cannot be attributed to the consumption of farmed trout. (C) 2005 Elsevier Ltd. All rights reserved.