

**The SCHER report greatly underestimates mercury in deceased**  
 Tandvårdsskadeförbundet/The Swedish Association of Dental Mercury Patients)  
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Our investigation of emissions from cremation shows that the number of grams of mercury in a deceased in Sweden is on average 10 to 20 grams. This is three to six times more than the Swedish official figure of 3 grams (Factsheet from the Swedish EPA) and far more than the 1.5 grams which SCHER (2013) and the Bio Intelligent Service Report (2012) count with.

If SCHER's estimation is right there would in average be just one small amalgam filling in a deceased person and this cannot be true. Different kinds of fillings weighting from 1 gram to 10 grams, meaning that they contains 0.5 to 5 grams of mercury each. Pictures of different kinds of fillings are shown below.

**Figure 1: Example of small and big amalgam fillings**



The three grams of mercury, which is the Swedish official estimate, equals one to three small fillings, as half of the weight is made up of pure mercury. Other countries have made estimates of the same size (see figure 2). Even those estimates are too small in our opinion as well as SCHER's 1.5 grams per cremated corpus.

**Figure 2:** *The average of mercury in deceased in European countries*

| Country     | Amount of mercury/cremation |
|-------------|-----------------------------|
| Sweden      | 3                           |
| Denmark     | 4                           |
| Norway      | 2-4.9                       |
| Switzerland | 2.5                         |

Source: Naturvårdsverket, Branschfakta Krematorieverksamhet (2010). Swedish EPA. Factsheet

We have understood that the knowledge about the amount of the population's dental amalgam is not sufficient. Our estimation of mercury and the amount of amalgam fillings and mercury in deceased is based on statistics concerning the presence of amalgam fillings and own teeth in elderly, information from dentists and dentist nurses and the weighing of removed amalgam received from members.

The only estimation of filling materials in the Swedish population comes from the ten year old Dental Material Royal Commission's report Dental Material and Health based on a survey to a statistical sample of the Swedish population.

This shows that 73 percent born 1924 to 1946 had amalgam in their teeth. In Sweden the percentage may have dropped after amalgam ban in 2009, but no dramatic differences is expected in older people.

**Figure 3:** *Proportion of people with amalgam fillings and edentulous*

| Borns                          | 1924-1929 (%) | 1930-1946 (%) |
|--------------------------------|---------------|---------------|
| Edentulous                     | 16            | 8             |
| Only amalgam                   | 35            | 39            |
| Amalgam + other fillings       | 32            | 40            |
| Other dental filling materials | 15            | 13            |
| No fillings                    | 0             | 1             |

Source: Dentala material och Hälsa, SOU 2003:53, Annex 3 page 310 (complementary question)

Of those born in 1930 to 1946, 79 percent had amalgam and only eight percent had missing teeth or no repairs. The proportion of older people with their own teeth will increase considerably in coming years and the same happens in other European countries.

The 73 percent of people over 67 years who have amalgam fillings have amalgam crowns of the molars and also several other teeth repaired with amalgam according to the consulted dentists and dental nurses. Our conclusion from the interviews are

that a normal person with amalgam have 2-4 crowns or big molar fillings, 2-8 medium sized fillings and 2-4 small fillings.

An amalgam crown of a molar has a weight of 9 to 10 grams, a big molar filling around 8 grams and smaller filling weight from a little less than one gram and upwards. Half of the amalgam filling consists of pure mercury. Below we make calculations for two groups according to the interviews with dentists and dental nurses; one with few amalgam fillings and the other one with more.

We find that an average person above the age of 67 in Sweden who has dental amalgam according to our calculations above has at least 15 grams mercury in the teeth and some have as much as 30 grams (see figure 5).

**Figure 4:** Amount of mercury in older people with amalgam

| <b>Amalgam fillings</b>                           | <i>Small proportion amalgam</i> |                    | <i>Large proportion amalgam</i> |                    |
|---|---------------------------------|--------------------|---------------------------------|--------------------|
|   | <b>Number</b>                   | <b>weight/gram</b> | <b>Number</b>                   | <b>Weight/gram</b> |
| Crowns big molar (á 8 grams)                      | 2                               | 16                 | 4                               | 32                 |
| Medium sized (á 3 grams)                          | 4                               | 12                 | 8                               | 24                 |
| Small fillings (á 1 gram)                         | 2                               | 2                  | 4                               | 4                  |
| Total weight of amalgam                           |                                 | 30                 |                                 | 60                 |
| <b>Total amount of mercury/half of the weight</b> |                                 | <b>15</b>          |                                 | <b>30</b>          |

Source: Interviews with dentist and dental nurses and weighting removed amalgam fillings

We estimate that the deceased in Sweden currently have in average 10 to 20 grams mercury in their teeth. The calculation is based on the fact that ten years ago 73 percent of those born between 1924 and 1946 had amalgam fillings or amalgam in combination with other dental materials. We do not take into account the 14 percent having only alternative materials, even though we know there is commonly amalgam under crowns and white fillings.

If only half of the deceased in other European countries have their own teeth it would be between 7.5 to 15 grams mercury per dead person. It is difficult to believe that 1.5 grams mercury per deceased is correct. In most countries dentists still work with amalgam as the most common dental material and dental health is getting better meaning that more people have their own teeth when they die and a lot of amalgam fillings or crowns.