

## Toxic Lead in food or ‘much to do about nothing’

John Swift came to the DI meeting and reported the findings of a Norwegian report. People who eat lead shot game meat had higher lead level than people who don't. I cannot accuse John Swift of lying but I make the accusation that he was misleading and disingenuous in his reporting.

The new report from Norway is the “Consumption of lead-shot cervid meat and blood lead concentrations in groups of adult Norwegians.” Meltzer et al (2013)

The Abstract of the report states:

*Several recent investigations have reported high concentrations of lead in samples of minced cervid meat. This paper describes findings from a Norwegian study performed in 2012 among 147 adults with a wide range of cervid game consumption. The main aim was to assess whether high consumption of lead-shot cervid meat is associated with increased concentration of lead in blood. A second aim was to investigate to what extent factors apart from game consumption explain observed variability in blood lead levels.*

*Median (5and95percentile) blood concentration of lead was 16.6 mg/L (7.5and39 mg/L). An optimal multivariate linear regression model for log-transformed blood lead indicated that cervid game meat consumption once a month or more was associated with approximately 31% increase in blood lead concentrations. The increase seemed to be mostly associated with consumption of minced cervid meat, particularly purchased minced meat.*

*However, many participants with high and long-lasting game meat intake had low blood lead concentrations. Cervid meat together with number of bullet shots per year, years with game consumption, self-assembly of bullets, wine consumption and smoking jointly accounted for approximately 25% of the variation in blood lead concentrations, while age and sex accounted for 27% of the variance. Blood lead concentrations increased approximately 18% per decade of age, and men had on average 30% higher blood lead concentrations than women. Hunters who assembled their own ammunition had 52% higher blood lead concentrations than persons not making ammunition.*

*In conjunction with minced cervid meat, wine intake was significantly associated with increased blood lead. Our results indicate that hunting practices such as use of lead based ammunition, self-assembling of lead containing bullets and inclusion of lead-contaminated meat for mincing to a large extent determine the exposure to lead from cervid game consumption.*

After reading this you may be thinking that hunters that eat lead shot game are doomed! I believe this is no more than scare mongering, we had the scare in fresh chickens last week and soon we may see a report in the shooting press reporting the high levels of lead in game meat is dangerous and reporting the findings in the Norwegian study.

We are told that lead is toxic. They banned lead for wildfowling, they now want to have a total lead ban for all shooting. That is the aim of the WWT and RSPB, the WWT reported this in a BBC news report and the RSPB have reported their intent on their web site.

Oh, they say, they've removed lead from paint, lead from pencils and lead from petrol.

Lets look at this a little closer, over the years we have been told that lead is toxic, CO2 is the cause of Anthropogenic Global Warming (AGW) and carrots help you see in the dark.

I do not intend to go into detail of CO2 but we have been told that CO2 is the cause of global warming were as in fact NASA tells us that there has been no global warming for over 15 years. I believe this was to create a market for CO2 and alternative energy systems.

They haven't removed the lead from the inside of pencils. Lead wasn't put into the graphite, it was in the paint on the outside of the pencils.

The wartime propaganda told the British public that carrots helped you see in the dark. This was to make the Germans think RAF pilots ate carrots to see in the dark, to hide the fact that we had radar.

That brings back to TOXIC lead. Lead is toxic in high concentrations and the lead they put into paint and petrol was not the lead we use for shooting. The lead we use in shooting is solid lead and may have a little bit of antimony in it to make it harder.

Lead in petrol was not solid lead, in was Tetraethyl lead and it had a chemical formula of  $(\text{CH}_3\text{CH}_2)_4\text{Pb}$ . Researching this article I found a web site reporting that the level of lead in the air reduced year on year from 1920 but when Tetraethyl lead was removed from petrol it started to go up year on year. The theory is that the Tetraethyl lead in petrol combined with the lead in the air and fell to the ground.

Lead in paint was white and red lead, white lead is lead carbonate or lead sulphate, and red lead is lead tetroxide. White lead was the main white lead pigment used in some paints. Red lead was used in metal paint and primer coatings.

The lead used in shot and bullets is not toxic in its solid state and is very stable.

Now lets look at the Norwegian report, they report hunters that eat lead shot game meat having higher levels of lead in their blood than people who do not. This may be true but how toxic is the level they have?

We know the human body needs trace elements of metals and minerals. You need Iron and Zinc. You also have trace elements of silver and lead. I'm told we also need trace elements of Arsenic!

It is said that the phrase born with a silver spoon, was because people that used silver cups for wine and drinks had trace elements of silver in the blood helping to fight off diseases.

Question, do we also need a trace element of lead in our blood? I do not know the answer.

How much lead did the Norwegian hunters have in their blood?

The Norwegian report says that an average of 22.3ug/l lead was found in the blood of hunters that eat lead shot game meat. That was higher than people who did not eat lead shot game meat.

How toxic is 22.3 ug/l of lead in the blood?

ug refers to micrograms and L is litres, so there is 22.3 micrograms of lead in every litre of blood. To put this into perspective the average is a trace element of a really very small tiny amount of only 0.0000223 grams of lead per litre of blood.

That is the claim and we are being told that we should reduce that lead level. John Swift told the DI back in 2010 that there is lead in the food chain and we have to find ways to reduce it.

What is the safe level of lead in blood?

I work with lead in the workshop and Health and Safety tell me that the max level of lead in my blood should be not more than 600ug/l, at that level I have to stop working with lead. At 500ug/l I have to see a doctor. That is 0.000600 grams per litre of Blood.

If I read the American study Schafer (2005) correctly, the blood lead levels in the general population are expected to be around 15 µg/dL, 15 ug/dl is 150 ug/l.

That is why at the end of the Norwegian report, that an average of 22.3ug/l in hunters eating lead shot game is lower than the average American at 150ug/l, comes to the clear conclusion that **“the risk at an individual level is low or negligible.”**

So all this hype about higher lead levels in people who eat lead shot game is no more than scare mongering. This article is headed, toxic Lead in food or ‘much to do about nothing’ my conclusion is that it is **“much to do about nothing!”**