

## Provocation tests for Heavy Metal toxicity in eighteen patients with Parkinson's disease.

by veterinarian Hanne Koplev

This is a minor "pilot project" described by and paid by those patients, whose data are part of this material. The material indicates that Heavy Metal toxicity might be a contributory cause to Parkinson's disease and that more research on this topic needs to be carried out.

The causes of Parkinson's disease (PD) are unknown. Many theories about different factors are under discussion, especially the influence of the environment.

Heavy Metals are mentioned, for example Mercury and Manganese <sup>1</sup>.

Toxicity with Copper is a known cause of Parkinsonism <sup>2</sup>.

Statistically 25 % of the patients with PD are incorrectly diagnosed <sup>3</sup>. This fact makes scientific research into PD difficult.

Anti-PD medication can probably result in some damage of the brain, why it must be contemplated that the medication itself might prompt iatrogenic Parkinsonism <sup>4</sup>. Scanning for PD must therefore be performed before starting medication or shortly after in order to give an accurate picture.

Also the ability of the anti-PD medication to probably create dependency (abuses) should be considered, and when evaluating the patients the symptoms should be divided into:

- 1) Symptoms caused by PD,
- 2) Symptoms caused by side effects of the medication,
- 3) Withdrawal symptoms,
- 4) Symptoms caused by other diseases than PD.

It is difficult to distinguish between causes of the symptoms, as for example tremor can appear in all of the four mentioned categories.

From March 2001 until March 2006 eighteen patients with PD have been tested for Heavy Metal toxicity by provocation tests with a chelating agent. Doctors trained in detoxification treatment have performed the tests in private clinics. The patients have to pay the treatment themselves.

Five patients (OG, KE, EY, HL, SEL) have been tested with Atamir (penicillamine) for metal toxicity (Copper, Mercury and 14 other Heavy Metals) with a daily dose of 30 mg./ kg. bodyweight, divided into 4 doses, given 2 days before the provocation test (the post-test). The urine sample is collected throughout 24 hours.

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Four different physicians have carried out the tests and the additional treatments.

One patients (HK) has been tested with DMSA (meso 2,3-dimercaptosuccinic acid) for metal toxicity (Copper, Mercury and 14 other Heavy Metals) with a dose of 30 mg./ kg. bodyweight, but maximal 2 gram, given the evening before the provocation test (the post-test). The urine sample is collected throughout 24 hours from the next morning. In this case by mistake the urine was only collected during 6 hours.

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Twelve patients have been tested with Dimaval (= DMPS: The sodium salt of 2,3-dimercaptopropane-1-sulfonic acid) for toxicity by Copper and Mercury<sup>5</sup>.

Dimaval is used in dose of 250 mg slowly intravenous. The provoked urine sample is collected 45 minutes after the injection.

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<sup>1</sup> <http://www.webmd.com/parkinsons-disease/parkinsons-causes>

<sup>2</sup> Diagnosis and Management of Parkinson's Disease. Cheryl H. Waters, MD. Second Edition ISBN:1-884735-53-3

<sup>3</sup> <http://www.yourhealthbase.com/database/a91e.htm>

<sup>4</sup> Parkinsons Sygdom. En bog for patienter og pårørende. Henning Pakkenberg og Erik Dupont. Munksgaard forlag ISBN 87-16-11693-3

<http://web.orionpharma.se/opn/page?id=3015&key=11031&editionkey=10930>

[http://www.tidsskriftet.no/pls/lts/PA\\_LT.VisSeksjon?vp\\_SEKS\\_ID=1137405](http://www.tidsskriftet.no/pls/lts/PA_LT.VisSeksjon?vp_SEKS_ID=1137405)

<http://www.smh.com.au/news/National/Aussie-experts-reveal-Parkinsons-clue/2005/11/10/1131578166205.html>

<sup>5</sup> <http://www.holistic-medicine.dk/submenu03e.html>

<http://www.algonet.se/~leif/yrGON95a.html>

Analyses were carried out by Laboratorium für Spektralanalytische und Biologische Untersuchungen, Bopserwaldstrasse 25, D-70184 Stuttgart, Germany.

The same physician has carried out the tests and the additional treatments.

The additional treatment may consist of using a chelating drug (Dimaval, DMSA, Atamir or EDTA for intoxication with Lead. EDTA is contraindicated, when intoxicated with Mercury.).

In some of the cases intravenous infusion of large doses of vitamin C have been used (50-90 grams slowly intravenous by infusion.) and / or glutathione intravenous.

Some of the patients – but not all of them – have had their amalgam fillings removed from their teeth. The removal of the fillings has in some cases followed the rules set by the IAOMT <sup>6</sup>.

Furthermore the additional treatment has included: - nutritional guidance, - vitamin supplement guidance – and guidance in avoiding heavy metal exposure.

Six different physicians have performed the treatments and the patients have all been treated individually. The enclosed diagram shows a patient as Heavy Metal intoxicated if treatment for Heavy Metal toxicity has been started or proposed by his or her physician.

As criteria of success, the patients' answers to questions about – their state of health after the detoxification treatment – and about the amount of drugs, is used.

Because Parkinson's disease is considered to be chronic, incurable and progressive the common picture of the disease is a deteriorating state of health with a constant increasing use of medication.

Seven patients (KE, OG, KH, AK, NL, HL, SEL) out of eighteen have got a conclusive diagnosis by PET - or DAT-SPECT- scanning. Out of the seven, four patients (KH, AK, HL, SEL) have been scanned with relation to the medication, so that an iatrogenic Parkinsonism due to anti-PD medicine can be excluded.

The test result for toxicity by Heavy Metals indicates acute toxicity by Heavy Metals in one patient (OG) out of eighteen. In this case the pre-test for Mercury was positive<sup>7</sup>.

The high level of Mercury could in this case be explained by example tooth grind by night, why the post-test shows a lower level of Mercury.

This patient is the only one who would be diagnosed as intoxicated by Heavy Metals with the methods used by public hospitals in Denmark.

**For sixteen of the eighteen tested patients toxicity by Heavy Metals might have an influence on their neurological disease.**

The two patients (NL, AO), who were estimated not to be intoxicated by Heavy Metals, have been or were medicated with medicine, which decreases the Dopamine production. This may explain their PD-symptoms. NL and AO have not been treated for Heavy Metal toxicity.

Treatment with psychoactive drugs of the type, which decreases the production of Dopamine, is described in literature as not always reversible when the patient terminates the medication<sup>8</sup>.

When a low degree of toxicity is estimated as being of no importance, it must be taken into account that:

- 1) The test could be false negative,
- 2) There is no lowest level, by which Mercury is nontoxic,
- 3) The patients have only been tested for some Heavy Metals (mostly Copper and Mercury), but they could be intoxicated by other Heavy Metals.

OG, EY and HL have been treated with Atamir during some time, but have not had their amalgam fillings removed.

Two patients (HJ and KE) have not asked for detoxification treatment, and some patients (SE, PU, KL, SS), who have been confirmed to have metal toxicity, do not follow the recommended treatment.

Five of the treated patients (SE, PU, KH, JL, EY) have reported that they have reduced PD-symptoms after detoxification.

Four patients (SE, PU, KH, AK, SEL) have chosen to remain without medication. Out of those four patients, two of them (KH, AK) have received a conclusive PD-diagnosis. Four patients (KL, JL, OG, EY) have

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<sup>6</sup> [http://www.iaomt.org/articles/category\\_view.asp?intReleaseID=271&catid=30](http://www.iaomt.org/articles/category_view.asp?intReleaseID=271&catid=30)

<sup>7</sup> <http://www.tenneroghelse.no/default.asp?page=62&article=60>

<sup>8</sup> Parkinson's Sjukdom, Gifter, Metaller Och Frie Radikaler af Docent Mats Hansson

reduced their use of anti-PD-medication. (Patients with PD are normally treated with increasing doses of anti-PD-medication.)

The results from this small project indicates that provocation-tests must be continued even after the patients seem to be detoxified due to:

- 1) Continued release of bodily metal deposits
- 2) Possible new exposures to metal poisoning
- 3) False negatives on the basis of other metals competing for receptor sites
- 4) Lab error

Scientific research in PD indicates that Dopamine-production is very sensitive to the placebo effect<sup>9</sup>. By collecting data over a longer period, it must be presumed that the placebo effect is eliminated or diminished.

**Testing eighteen patients with PD with provocation tests for toxicity by Heavy Metals demonstrates no direct connection between the level of toxicity and PD-symptoms.**

Symptoms considered as being PD-symptoms could, as already mentioned, have other causes ex. misdiagnosed side effects of the medication.

Toxicity with more than one Heavy Metal may create a synergy effect (they enhance the toxicity of each other)<sup>10</sup>, which means that a discrete toxicity with for example Copper together with a discrete toxicity with for example Mercury can result in serious toxicity with grave health problems.

Toxicity and biochemical reactions of Heavy Metals can unfortunately be described as very complex.

The Danish Departments for Environmental Medicine are not familiar with provocation tests, why persons with chronic toxicity by Heavy Metals are often left undiagnosed and therefore untreated with Chelating Agent etc..

The symptoms seen in patients with PD are explained with a decrease (lack of) the neurotransmitter Dopamine<sup>11</sup>, but PD-patients have got several abnormal levels of other substances for example:

- 1) Low level of:
  - A) Intra cerebral met-enkephalin (a neurotransmitter)<sup>12</sup>,
  - B) Vitamin B-12,
  - C) Glutathione (an antioxidant)<sup>13</sup>,
  - D) Coenzyme Q 10 (an antioxidant)<sup>14</sup>,
- 2) Increased level of homocysteine<sup>15</sup> (a waste product by metabolizing amino acids containing sulfur).
- 3) Abnormal metabolic transference of sulfur substances<sup>16</sup>.

In patients with PD some waste products are stored in brain cells. These accumulations are called Lewy Bodies<sup>17</sup>. Neither existence of Lewy Bodies nor clinic symptoms as reduced sense of smelling or problems

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<sup>9</sup> <http://www.medicalnewstoday.com/index.php?newsid=8370>

<http://web.orionpharma.se/opn/page?id=3015&key=11725&editionkey=10306>

<sup>10</sup> Dansk Selskab For Orthomolekylærmedicin. Er du forgiftet af dine tandfyldninger ?. Ny udgave 2005. ISBN 87-984 450-1-4

<sup>11</sup> [http://www.danmodis.dk/Frames/2\\_PS\\_MAINFRAME\\_KLINISK.htm](http://www.danmodis.dk/Frames/2_PS_MAINFRAME_KLINISK.htm)

<sup>12</sup> Miltiades Karavis. The Neurophysiology of Acupuncture: a Viewpoint. ICMART 1996 Copenhagen

<http://users.med.auth.gr/~karanik/english/neuro1.htm> Part 3

<sup>13</sup> <http://www.brainrecovery.com/> [http://www.findarticles.com/p/articles/mi\\_m0ISW/is\\_2001\\_July/ai\\_76445678](http://www.findarticles.com/p/articles/mi_m0ISW/is_2001_July/ai_76445678)

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=9444566&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9444566&dopt=Abstract)

[http://www.innovations-report.com/html/reports/life\\_sciences/report-53051.html](http://www.innovations-report.com/html/reports/life_sciences/report-53051.html)

<sup>14</sup> [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=12374491&dopt=Citation](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12374491&dopt=Citation)

[http://www.neurologyreviews.com/dec02/nr\\_dec02\\_coenzymeq10.html](http://www.neurologyreviews.com/dec02/nr_dec02_coenzymeq10.html)

<sup>15</sup> <http://content.karger.com/ProdukteDB/produkte.asp?Aktion=ShowPDF&ProduktNr=223840&Ausgabe=224964&ArtikelNr=7984&filena me=7984.pdf>

<sup>16</sup> <http://www.scandlab.com/Leveravqif.PDF>

<sup>17</sup> <http://www.ici.org/cgi/content/full/110/10/1403>

with blood pressure etc. can be explained with decreased Dopamine-production caused by a reduced amount of Dopamine producing nerves cells in Substantia Nigra. Studying the pattern of biochemical reactions of Heavy Metals may give some explanations of the diverging values including the decreased Dopamine-production<sup>18</sup>

Toxicity with Heavy Metal (from the environment) will not be the only cause of health problems, as problems could also be caused by:

- 1) An individual increased sensitivity to toxicity with Heavy Metal<sup>19</sup>.
- 2) An individual defective excretion of Heavy Metals.
- 3) Allergic reaction to Heavy Metals.
- 4) The combination of 1), 2) and 3).

Besides, there are many other causes to PD than toxic reaction by Heavy Metals.

When performing provocation tests for toxicity by Heavy Metals on patients with PD, toxicity can be diagnosed and treated even though the treatment must continue for probably a long period. It is still unknown if the damage caused by the toxicity is reversible, but some examples can be found in the literature<sup>20</sup>.

Dopamine can auto-oxidize to produce free radicals particularly in the presence of iron and other Heavy Metals<sup>21</sup>. To prevent iatrogenic Parkinsonism it might be advisable to test patients with PD for toxicity by Heavy Metals before medication with anti-PD medicine.

PD is an expensive disease for the society, invalidating for the patient and hard to handle for the family. If treatment for diagnosed toxicity by Heavy Metal can cure PD, or eliminate some of the symptoms, or make the patient able to decrease medication, it is a possibility that needs to be explored.

Possible causes of toxicity with Heavy Metal can arise from:

- 1) Mercury leaking from Amalgam-fillings<sup>22</sup>, Mercury from fish, Mercury from environmental pollution (from ex crematories and industry) etc.
- 2) Copper from especially the intensive use in Danish Agriculture Production (pig production) which is spread to the environment and ends up in drinking water and food<sup>23</sup>, Use of intrauterine prevention made of Copper, utensils from Copper for example pots, pipelines made by Copper, jewels made by Copper, leaking Copper from high Copper containing Amalgam, use of Vitamin -mineral tablets containing Copper etc.
- 3) Manganese from welding etc.
- 4) Lead<sup>24</sup> from polluted food, inspiration of air containing Lead etc.

Thus it can be concluded, that toxicity by Heavy Metals can be expected to be common in the population.

**The result from testing eighteen patients with PD indicates, that more research in toxicity by Heavy Metals as a cause or as one of the causes to PD is needed** by using:

- 1) Provocation test for toxicity by Heavy Metal.
- 2) Test for allergic reaction to Heavy Metals by using MELISA-test<sup>25</sup> etc.

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<sup>18</sup> [http://www.parkinsonresearchfoundation.org/index.php?option=com\\_content&task=view&id=121&Itemid=83](http://www.parkinsonresearchfoundation.org/index.php?option=com_content&task=view&id=121&Itemid=83)

<sup>19</sup>

<sup>20</sup> Frederik Berglund. 150 år med amalgamfyldninger. Klitrose ISBN 87 7728 099 7

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=8784840&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8784840&dopt=Abstract)

<sup>21</sup> [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=7716790&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7716790&dopt=Abstract)

<sup>22</sup> Læge Birgitta Brunen og Adima Bergli. Et nyt syn på sklerose. Borgen forlag. 1 udgave. ISBN 87-21-01320-9

<sup>23</sup> [http://www.snowboat.no/Miljomin\\_Hedegaard.htm](http://www.snowboat.no/Miljomin_Hedegaard.htm) <http://www.snowboat.no/Miljomin.-Koplev.htm>

<sup>24</sup> <http://www.farmakol.ku.dk/kap4tox.pdf>

<sup>25</sup> [www.MELISA.org](http://www.MELISA.org)

- 3) Test for genetic abnormal sensitiveness to Heavy Metals <sup>26</sup>.
- 4) Use of laboratory tests to control certain parameters, which differs in patients with PD for example blood Glutathione level.

Thanks to PD-patients, their family, doctors and others for their help and support for this "project".

If you would like to discuss this project further or want more information, please do not hesitate to contact Hanne Koplev, Soltoften 11, DK-8830 Tjele, Denmark. E-mail: [Akuvet@email](mailto:Akuvet@email).

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<sup>26</sup> The amount and distribution of the sulphuric amino acid in some enzymes can be individual. As heavy metals adheres to sulphuric bindings and changes (destroys) those substance, it must be assumed, that there is a hereditary individual variation in the ability to endure exposition to Heavy Metals.  
*Science*, Vol 299, Issue 5610, 1240-1243 , 21 February 2003 COMT *val<sup>158</sup>met* Genotype Affects -Opioid Neurotransmitter Responses to a Pain Stressor  
[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=12897404&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12897404&dopt=Abstract)  
[http://www.nel.edu/pdf /25\\_5/NEL240504R01\\_Mutter\\_.pdf](http://www.nel.edu/pdf /25_5/NEL240504R01_Mutter_.pdf)