



LAB #:
 PATIENT:
 ID:
 SEX: Male
 AGE: 41

Toxic & Essential Elements; Hair

TOXIC METALS					
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum (Al)		5.2	< 7.0		
Antimony (Sb)		< 0.01	< 0.066		
Arsenic (As)		0.018	< 0.080		
Barium (Ba)		2.0	< 1.0		
Beryllium (Be)		< 0.01	< 0.020		
Bismuth (Bi)		0.003	< 2.0		
Cadmium (Cd)		0.027	< 0.065		
Lead (Pb)		0.39	< 0.80		
Mercury (Hg)		0.76	< 0.80		
Platinum (Pt)		< 0.003	< 0.005		
Thallium (Tl)		0.001	< 0.002		
Thorium (Th)		< 0.001	< 0.002		
Uranium (U)		0.070	< 0.060		
Nickel (Ni)		0.12	< 0.20		
Silver (Ag)		0.03	< 0.08		
Tin (Sn)		0.03	< 0.30		
Titanium (Ti)		0.26	< 0.60		
Total Toxic Representation					

ESSENTIAL AND OTHER ELEMENTS								
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE				
				2.5 th	16 th	50 th	84 th	97.5 th
Calcium (Ca)		744	200- 750					
Magnesium (Mg)		83	25- 75					
Sodium (Na)		140	20- 180					
Potassium (K)		95	9- 80					
Copper (Cu)		33	11- 30					
Zinc (Zn)		140	130- 200					
Manganese (Mn)		0.10	0.08- 0.50					
Chromium (Cr)		0.36	0.40- 0.70					
Vanadium (V)		0.020	0.018- 0.065					
Molybdenum (Mo)		0.044	0.025- 0.060					
Boron (B)		0.45	0.40- 3.0					
Iodine (I)		4.4	0.25- 1.8					
Lithium (Li)		0.011	0.007- 0.020					
Phosphorus (P)		159	150- 220					
Selenium (Se)		0.90	0.70- 1.2					
Strontium (Sr)		1.5	0.30- 3.5					
Sulfur (S)		45900	44000- 50000					
Cobalt (Co)		0.031	0.004- 0.020					
Iron (Fe)		6.6	7.0- 16					
Germanium (Ge)		0.029	0.030- 0.040					
Rubidium (Rb)		0.085	0.011- 0.12					
Zirconium (Zr)		0.009	0.020- 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 8/16/2012	Sample Size: 0.201 g	Ca/Mg	8.96	4- 30
Date Received: 8/22/2012	Sample Type: Head	Ca/P	4.68	0.8- 8
Date Completed: 8/24/2012	Hair Color: Brown	Na/K	1.47	0.5- 10
Methodology: ICP/MS	Treatment:	Zn/Cu	4.24	4- 20
	Shampoo: Shower Gel	Zn/Cd	> 999	> 800



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Endbefund Seite: 1/2

Patient: [Redacted]
 geb.: 1970 M
 Kasse: Privat

Material: HAAR
 Entnommen: 16.07.12

Kopie an Dr. med.

Bestimmung	Resultat	Referenzbereich
Untersuchungsmaterial:	Haar	
Aluminium	2.89 µg/g	< 10.0
Arsen	0.02 µg/g	< 0.5
Blei	0.34 µg/g	< 5.0
Calcium	1760 * µg/g	220 - 1600
Cadmium	0.02 µg/g	< 0.5
Chrom	0.06 µg/g	< 2.00
Cobalt	0.09 µg/g	< 1.1
Eisen	12.6 µg/g	5.5 - 13.7
Kalium	52.3 µg/g	0.90 - 310.00
Kupfer	41.7 µg/g	7.5 - 80.0
Lithium	0.21 µg/g	0.01 - 0.50
Magnesium	162 * µg/g	10.0 - 100.0
Mangan	0.19 µg/g	0.1 - 1.0
Molybdän	0.04 µg/g	0.02 - 0.15
Natrium	148 * µg/g	10 - 130
Nickel	0.57 µg/g	< 2.00
Palladium	< 0.01 µg/g	< 0.02
Selen	0.55 µg/g	0.20 - 5.50
Vanadium	< 0.05 µg/g	< 0.5



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Endbefund

Seite: 2/2

Patient: [redacted]
 geb.: [redacted] 1970 M
 Kasse: Privat
 Material: HAAR
 Entnommen: 16.07.12

Bestimmung	Resultat	Referenzbereich
Zink	571 * $\mu\text{g/g}$	50 - 300
Zinn	0.13 $\mu\text{g/g}$	< 1.00
Quecksilber	0.43 $\mu\text{g/g}$	< 2.0

Validiert am 24.07.2012 um 15:42 Uhr. Verantwortlicher Arzt: Dr. Köster

Essential and other Elements	Actual Test Value	Direction	Color	Local Lab Lower Ref Range (2.5pct) - including Fudge Factor if needed -	Local Lab Higher Ref Range (97.5th pct) - including Fudge Factor if needed -	Local Lab Lower Ref Range (16th pct) - including Fudge Factor if needed -	Local Lab Higher Ref Range (83rd pct) - including Fudge Factor if needed -	DDI Geometric Mean	DDI Sigma	Fudge Factor
Calcium (Ca)	1.760,000	right	Red	220,000	1,600,000	357,644	984,220	387,298	1,936	1,131
Magnesium (Mg)	162,000	right	Red	10,000	100,000	17,575	56,899	43,301	1,732	0,787
Sodium (Na)	148,000	right	Red	10,000	130,000	18,741	69,365	60,000	3,000	0,252
Potassium (K)	52,300	right	Green	0,900	310,000	3,763	74,136	26,833	2,981	1,358
Copper (Cu)	41,700	right	Green	7,500	80,000	13,391	44,805	18,166	1,651	1,647
Zinc (Zn)	571,000	right	Red	50,000	300,000	77,542	193,443	161,245	1,240	1,220
Manganese (Mn)	0,190	left	Green	0,100	1,000	0,176	0,569	0,200	2,500	0,830
Chromium (Cr)	0,060	left	Red	0,668	2,000	0,874	1,529	0,529	1,323	2,184
Vanadium (V)	< 0,050	left	Yellow	0,040	0,500	0,075	0,270	0,034	1,900	4,153
Molybdenum (Mo)	0,040	left	Green	0,020	0,150	0,033	0,092	0,039	1,549	1,642
Lithium (Li)	0,210	right	Yellow	0,010	0,500	0,026	0,192	0,012	1,690	15,104
Selenium (Se)	0,550	left	Green	0,200	5,500	0,450	2,443	0,917	1,309	3,539
Cobalt (Co)	0,090	left	Yellow	0,047	1,100	0,102	0,508	0,009	2,236	25,401
Iron (Fe)	12,600	right	Yellow	5,500	13,700	6,877	10,956	10,583	1,512	0,576
Palladium (Pd)	< 0,010									

Elements	Ratio	Result	DDI Lower Ref Range	DDI Higher Ref Range
Ca / Mg	10,864	Green	4,000	30,000
Ca / P	N/A		0,800	8,000
Na / K	2,830	Green	0,500	10,000
Zn / Cu	13,693	Green	4,000	20,000
Zn / Cd	28,550,000	Green	800,000	N/A

1. What are your current symptoms and health history?

It all started with a tick bite that went unnoticed, most probably in 2002 or 2003 (weighing 180lbs at that time, running 2-3 times a week 10-15km through the Spessart forest). No relevant health issues until spring/summer of 2004.

Starting in 2004, first only issues with my left knee, leading to a meniscus surgery in 2005 (allegedly large meniscal "bucket handle" tear).

From summer 2005, sciatic pain syndrome in my left leg, then dorsal flexor of the foot deficiency, particularly when having to stand still for some time. Three back surgeries in 2006, 2007 and 2008 with varying diagnoses and without any success.

Never felt healthy again since a two-week flu-like illness in February of 2009 (likely onset of acute Lyme disease). Several urinary tract infections between February and September of 2009, supposedly due to multi-resistant *Klebsiella pneumoniae* (probably also already due to *Bartonella* co-infection) leading to three hospitalizations. Back pain already diminished during 2009 after several i.v. antibiotic treatment attempts of the UTIs (and later completely vanished from Lyme disease treatment).

Depression and anxiety since the third relapse of the UTI in September of 2009, followed by a three months stay in a psychosomatic institution and therapy with antidepressants - again without any success. Proven pleocytosis in cerebrospinal fluid in January of 2010 (which should have been diagnosed as "probable neuroborreliosis" even following the guidelines of German Neurological Society), but I was told instead that nothing was wrong with me other than my hypochondria: "patient insists on physical complaints, fancies himself as suffering from Lyme disease".

Finally diagnosed from clinical symptoms with Lyme disease and *Bartonella* (due to typical striae under both armpits) by a LLMD in March of 2010 - Lyme testing at that time still was inconclusive (in the "grey area"). Antibiotics treatment for Lyme (Minocycline, Plaquenil) and *Bartonella* (Levaquin). Following a four-weeks course of Levaquin, suddenly highly positive Lyme and *Bartonella* titers in September of 2010.

Still worked full time between April of 2010 and June of 2011.

Starting from spring of 2011, recurring episodes of encephalopathy with extensive agitation, anxiety and seizures with coughing and choking. Very elevated blood pressure (220/110) despite therapy with three antihypertensives; tachycardia, extrasystoles and cardiac arrhythmia, cognitive and mental issues during the seizures.

During summer/autumn of 2011, school medicine doctors at German universities suspected a pheochromocytoma after 24h urine for catecholamines came back twice to three times increased. Two biopsies were done after a DOPA PET/CT showed a bright area in the prostate, but in the end, to no avail - it turned out to be only from prostatitis.

Several treatments with i.v. antibiotics, including Cefotaxime, Tigecycline, Ertapenem and Levaquin. In most cases, distinct improvement during therapy, but after i.v. therapy had ended, very fast relapse of symptoms (particularly from *Bartonella*) within just 4-6 weeks.

Diagnosis of severe mitochondrial dysfunction (Acumen labs, UK) with DNA adducts and blockage of Mn-SOD by a CFS-literate MD in March of 2012, heavy metals intoxication suspected. Four amalgams since about 1985, have been removed with proper safety measures in March and April of 2012.

After the last series of i.v. Ertapenem for 6 weeks and oral Levaquin for about 3 months, LTT titers for Lyme are back in the normal range, but I am not really better – I still suffer from many *Bartonella* ("psychiatric": anxiety, agitation, rage) and CFS/ME (horrible fatigue, headache, joint pain) symptoms.

Several genetic polymorphisms affecting detox capabilities:

Phase 1:

- CYP2D6: poor metabolizer
- CYP2B6*4 wt/vt: increased risk of accumulation of heavy metals, particularly mercury
- CYP3A5*3C wt/vt: poor metabolizer

Phase 2:

- GSTM1 vt/vt ("null" variant): extremely reduced potential for detoxification of aromates, epoxides, chinones, alkylhalogenides, benzyhalogenides, and particularly heavy metals (mercury).
- GSTP1 wt/vt: poor enzyme activity, further decreasing phase 2 detox capabilities for xenobiotics
- NAT2(*5A) wt/vt and NAT2(*6A) wt/vt ("slow acetylator"): poor enzyme activity, causing accumulation of toxines

Others:

- COMT[V158M] vt/vt: strongly reduced metabolism of catecholamines (stress hormones)
- ApoE: status not yet known (TBD)

List of current symptoms (as of August, 2012):

- agitation and targetless anxiety up to seizures with coughing and choking attacks (particularly at times when phase 2 liver detox seems to be overwhelmed by toxins and the level of catecholamines goes through the roof due to the COMT issue)
- swollen and painful lymph nodes in mandibular area, below both armpits and in the neck
- only sometimes: nerve pain in lower back and sciatic pain into left leg
- severe fatigue and tiredness – but also phases of prolonged sleeplessness at night due to reasonless agitation
- headache
- depression
- joint pain
 - knees (particularly right knee)
 - shoulders
 - wrists
 - small finger joints
- tinnitus/rining in both ears
- humming noise synchronous with pulse in right ear only (from inflammation?)
- muscle pain, high creatine kinase labs (up to 500U/l), muscle soreness, feeling of acidity
- guts issues (Candida?): belching, noises, flatulence, frequent/soft stools
- from time to time: prostate pain, itching feeling in urethra (Candida? Bartonella?)

2. Dental history (Wisdom teeth removed and when? Any other extractions. First root canal placed? Braces? First amalgam etc...)

One single wisdom tooth (right lower jaw) removed in 1991.

No other extractions.

No root canals.

Braces from 1984 to 1987 (plastics & stainless steel).

First amalgam filling: about 1985, four more between then and 1994.

Amalgams finally removed in mid-March and beginning of April of 2012

(had been told wrongly, but consistently, from blood testing several times

since falling ill with Lyme & co. in 2009 that mercury would not be an issue for me!!!).

3. What dental work do you currently have in place? What part of the dental clean-up have you completed?

All amalgams replaced by composite fillings, currently all dental work complete.

4. What dentistry did your mother have at any time before or during pregnancy?

Several amalgams (exact number unknown, as far as she remembers somewhere between 5 and 10).

5. What vaccinations have you had and when (including flu and especially travel shots)?

Typical baby and child vaccinations for a child born in (Western) Germany in 1970.
Luckily no flu vaccinations at all.
Travel vaccinations in 2001/2002 before trips to South Korea and Australia (exact vaccinations unknown, MD retired, so no more way to find out...).

6. Supplements and medications (including dosages) taken at time of hair test, or for the 3-6 months before the sample was taken?

Medications:

Levaquin 500mg 1-0-1
Propranolol 40mg 1-0-1
Clonidine 250µg (time-released) 1-1-1
Clonidine 75µg (not time-released) as needed, typically between 6x to 9x 75µg

Supplements:

Vit C 300mg plus Zinc 5mg (both time-released) 2-0-2
DHEA 50mg 1-0-1
Vit E (Tocotrienole) 50mg 1-0-1
Omega 3 fatty acids (EPA 180 mg, DHA 120 mg per caps.) 1-1-1
Depyrrol NF (Vit B6 as P5P 25mg, Zinc 25mg, Manganese 5mg) 1-0-1
Selenium 100µg (as Selenium Methionine)
Sodium Hydrogencarbonate 1000mg 1-1-1
Tri-Magnesiumdicitrate 600mg 1-0-1
Imunaflor (2×10^9 "good" bacterial cultures of 9 different kinds) 1-0-1
500ml of Green Tea 1-0-0

7. What is your age, height and weight?

Age: 41
Height: 1,80m (5ft 10⁷/₈"")
Weight: 110kg (242.5lbs)

8. Other information you feel may be relevant?

Massive redistribution of mercury after an unfortunate i.v. injection of Glutathione in June of 2012 (I was not aware of the Cutler protocol at this time) leading to typical mercury intoxication symptoms which were previously unknown to me as Lyme disease or Bartonella symptoms - thereby confirming mercury intoxication diagnosis:

- slight tremors of all extremities (arms & legs), particularly trying to do fine motor activities
- tremor even of the tongue
- involuntary twitching of muscles all over my body – every few minutes at another place (calves, breast, triceps, abdominals, cheeks/eyes)
- edema at both lower legs
- severe headache and worsening of tinnitus
- Candida/yeast infection with brain fog (like feeling drunk)
- guts issues: GERD, flatulence, diarrhea (candida)

9. What is your location – city & country (so that we can learn where certain toxins are more prevalent).

Location: 30km (19mi) east of Frankfurt am Main, Germany