Innovative approaches in diagnosing and cleansing of environmental toxicity

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The amount of potentially toxic (poisonous) substances has increased dramatically!
We have known for a long time how significant environmental toxins are as disease-causing factors. Since 1950, about 450,000 (Source: KMT Continuing Education Course - Presentation) new chemical substances have entered the environment and their significance for our health, respectively triggering all possible chronic disease and cancer is still in its infancy. Nevertheless, research can now clearly name many substances with regard to their toxicological profile (poisoning). The American platform "ATSDR" provides extensive information on toxins (poisons) in correlation with diseases and publishes every 2 years a ranking of the most toxic substances.

THE ATSDR 2019 SUBSTANCE PRIORITY LIST

2019 Rank	Substance Name	Total Points	CAS RN
1	Arsenic	1676	7440-38-2
2	Lead	1531	7439-92-1
3	Mercury	1458	7439-97-6
4	Vinyl Chloride	1356	75-01-4
5	Polychlorinated Biphenyls	1345	136-36-3
6	Benzene	1327	71-43-2
7	Cadmium	1318	7440-43-9
8	Benzo(a)pyrene	1307	50-32-8
9	Polycyclic Aromatic Hydrocarbons	1278	130498-29-2
10	Benzo(b)fluoranthene	1253	205-99-2

Figure: Extract from the ATSDR priority list.

Pollutant analysis at the Alpstein Clinic

Despite a variety of efforts by holistic physicians, the acceptance in the medical profession of toxins in the body as a major cause of disease has so far fallen short of expectations. The insufficient scientific acceptance of hair mineral analysis, SO-Check hand scan (Oligoscan®) or chelate mobilization test is also responsible for this. However, thanks to intensive research in the field of analytics, it has now been possible to determine the content of toxic substances

of all kinds in lymphocytes with a precision of 98 (!) percent. This is an "intracellular, electrical capacitive measurement". Until now, this was only common in wet chemistry. However, microchip technology has created considerable potential in fluid measurement, so that the system of measuring fluid substances, taking into account the metal-binding proteins, can also be applied to all kinds of other chemical substances (proteins, metals, organic substances) could be transferred (1-4).
The following example shows a measurement result of the "Top 27 Environmental Toxins" from the area of heavy metals and organic environmental toxins. It should be noted here that the concentration of the pollutants is in the range "nmol/l", which corresponds exactly to the concentration ranges of hormones and messenger substances in the nervous system.

iEC toxin analysis from a 56-y. old women suffering from metastatic colonic cancer

Ideally, the measured values should be below 10 nmol/l, which is rather rare. Frequently, the toxins are found in the borderline range (= borderline), which in total can also attain medical

significance. The laboratory cooperating with us offers a range of about 900 contaminants from 21 substance classes.

Adhesives (13)	Antibiotics (48)	Bactericidal (12)	Chemicals (88)
Chemotherapeutics (46)	Dyes (64)	Detergent (34)	Food toxins (71)
Fungal toxins (38)	Heavy metals (54)	Herbicides (37)	Insecticides (49)
Medication (103)	Microplastics (47)	Pesticides (40)	Plasticizer (softener) (45)
Radioactive substances (16)	Silicones (27)	Dental materials (51)	Vaccination supplements (42)
Volatile organic compounds (7)			

Table: Analysis profile of lymphocyte enrichments (number of substances in parentheses)
© Alpstein Clinic

Based on the mentioned ATSDR ranking list, we offer analysis of the most important 27 (Basic) and 53 (Advanced) at the Alpstein Clinic.
One of our patients with chronic weakness, skin eczema, recurrent infections, depression, and hormonal imbalances has approximately 300 pollutants in her lymphocyte measurements. What surprised us was that it showed only 1 percent with normal values, whereas more than 50 percent showed borderline or elevated levels of toxins.

Test Module	Very High >500	High >300	Borderline >100	Tolerable <100	Normal < 10
54 Metals	0	15	19	20	0
37 Herbicides	0	8	17	12	0
49 Insecticides	0	13	19	16	1
20 Microplastics	0	7	9	4	0
40 Pesticides	0	8	14	17	1
44 Microplastics	0	8	18	17	1
23 Dental materials	0	8	6	9	0
TOTAL 267	**0**	**67 (25%)**	**102 (38%)**	**95 (36%)**	**3 (1%)**

Table: Distribution of pollutant analysis in a patient, © Alpstein Clinic

The following example demonstrates the opportunity to measure also dental materials. The 45-years old patients was suffering from chronic fatigue since many years. Due to early carious defects he got not Amalgam but a lot of plastic fillings and some ceramic crowns.

iEC - intracellular Electrical Capacity - in Lymphocytes			
1 1,4-Cyclohexanedimethanol-residue	borderline	264,0	nmol/l
2 2-Chloroethyl vinyl ether	high	384,3	nmol/l
3 2-Ethylhexyl acrylate	tolerable	77,7	nmol/l
4 2,3-Epoxymethacrylacid	high	302,8	nmol/l
5 2,2,4,4-Tetramethyl-1,3-cyclobutanediol-residues (CBDO)	tolerable	122,4	nmol/l
6 4,4'-Methylenebis(cyclohexylamine)	high	316,4	nmol/l
7 Aliphatic-diacid-moieties	tolerable	17,3	nmol/l
8 Barium-Aluminium-Glass	high	331,2	nmol/l
9 Benzophenone	high	323,9	nmol/l
10 Benzylbutyl phthalate (BBP)	borderline	176,6	nmol/l
11 Bisphenol-A (BPA)	borderline	236,9	nmol/l
12 Bisphenol glycidyl methacrylate	borderline	214,0	nmol/l
13 Bisphenol-S (BPS)	high	338,9	nmol/l
14 Butyl Acrylate	high	362,7	nmol/l
15 Butyl Methacrylate	borderline	173,8	nmol/l
16 Campherchinon	tolerable	107,9	nmol/l
17 Cellulose acetate butyrate (CAB)	high	308,3	nmol/l
18 Cyclohexanedimethanol (CHDM)	borderline	297,9	nmol/l
19 Di-2-ethylhexyl phthalate (DEHP)	tolerable	123,8	nmol/l
20 Dibutyl phthalate (DBP)	tolerable	121,9	nmol/l
21 Dicarboyxl acid	borderline	289,7	nmol/l
22 Diethyl phthalate (DEP)	tolerable	123,8	nmol/l
23 Diphenyl-diisocyanate-residues	tolerable	74,3	nmol/l
24 Ethyl acrylate	tolerable	92,8	nmol/l
25 Ethylene glycol	tolerable	112,7	nmol/l
26 Glycerol-1,2-diacetate	borderline	228,5	nmol/l
27 Glycidyl methacrylate	borderline	167,7	nmol/l
28 Hexamethylene-diol	borderline	245,9	nmol/l
29 Hybrid composite	high	327,1	nmol/l
30 Hydrogenated methylene diphenyl diisocyanate	borderline	150,9	nmol/l
31 Hydroquinone	tolerable	86,2	nmol/l
32 Hydroxyethyl-Methacrylate	high	378,9	nmol/l
33 Hydroxyl (groups)	tolerable	87,6	nmol/l
34 Methyl-Acrylate	borderline	286,7	nmol/l
35 Nano hybrid composite	tolerable	33,4	nmol/l
36 Peroxide	tolerable	28,7	nmol/l
37 Polyamide (PA)	high	360,5	nmol/l
38 Polycarbonate	borderline	210,5	nmol/l
39 Polyester-polycabonate blend	borderline	279,4	nmol/l
40 Polyethylene terephthalate (PET)	tolerable	64,0	nmol/l
41 Polyethylene terephthalate glycol (PET-G)	borderline	171,4	nmol/l
42 Polyolefin	borderline	261,6	nmol/l
43 Polyurethane (PU)	high	322,4	nmol/l
44 Silicates	borderline	222,4	nmol/l
45 Silicon dioxide	borderline	245,4	nmol/l
46 Terephthalic acid (TPA)	high	363,9	nmol/l
47 Toluidin	tolerable	41,3	nmol/l
48 Triacetin (glycerin triacetat)	borderline	203,8	nmol/l
49 Triethylenglycoldimethacrylate	high	321,4	nmol/l
50 Trimethylolpropane triacrylate	high	356,3	nmol/l
51 Urethane dimethacrylate	borderline	188,5	nmol/l

Example of eIC analysis in lymphocytes regarding common dental materials (Top 51 of Alpstein Clinic)

In many cases, in addition to occupational and private exposure to sources of toxins, such high levels of pollutants are also due to genetic or epigenetic weaknesses of the excretory enzymes. This can also be analyzed very well in the meantime.

TOTAL ENZYMATIC ACTIVITY:	REDUCED			
Gene	**Variant**	**Genotype**	**Expected enzymatic activity**	**Estimated remaining enzymatic activity (%)**
CYP2E1	DraI SNP / rs72559710	homozygous wild type	**normal**	**PHASE I 100%**
CYP2E1	PstI SNP / rs3813867	homozygous wild type	**normal**	
EPHX1	Tyr113His	heterozygous mutation	**decreases**	**PHASE II 31,25 %**
EPHX1	His139Arg	heterozygous mutation	**decreases**	
GSTM1	Present / Absent	absent	**zero**	
GSTT1	Present / Absent	present	**decreases**	
GSTP1	Ile105Val	homozygous mutation	**strongly decreased**	
GSTP1	Ala114Val	homozygous mutation	**strongly decreased**	
SOD2	Val16Ala	homozygous mutation	**strongly decreased**	
COMT	Val158Met	homozygous wild type	**normal**	
Analysis	**Average length (base pairs)**		**Interpretation**	
Telomere length	**6323**		**excellent**	

Example of a decrease in the activity of detoxification enzymes phase 2 (mitochondria), © Alpstein Clinic

Targeted reduction of pollutant loads

Of course, the best diagnostics are of little use if effective, adequate therapies are not also available.

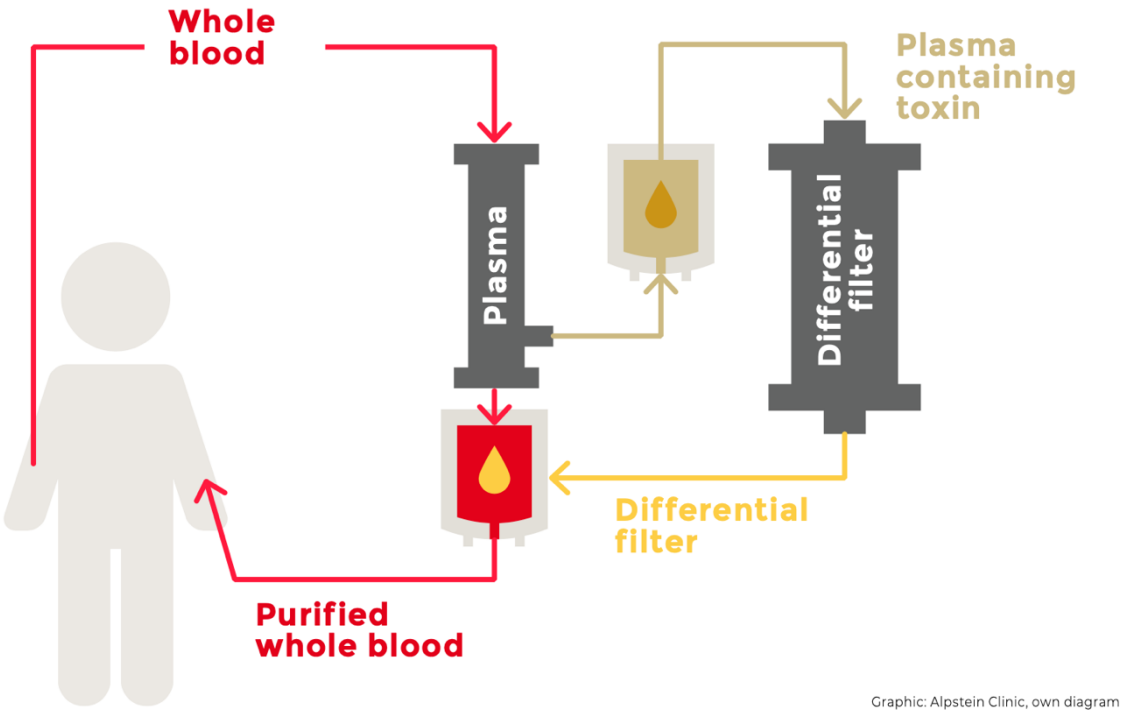
In this area the concept of the Alpstein Clinic has very extensive possibilities:

1. Targeted prevention of exposure to pollutants through meaningful information material.
2. General stimulation of elimination and detoxification (drink more, stimulation of organs through natural remedies, algae, zeolite and antioxidants).
3. Stimulating bowel elimination through colon hydrotherapy (form of colonic irrigation), coffee enemas, liver cleansing and therapeutic fasting.
4. Detoxification infusions with chelates and biological substances.
5. INUSpherese® as probably the most efficient method of separating harmful substances from the blood (see also on our homepage at: *www.alpstein-clinic.ch/therapiekonzept/inuspherese/*)

INUSpherese®: Highly innovative Blood plasma purification to strengthen the immune defense and self-healing

The original Chemopherese® concept particularly revolved around eliminating toxins, i.e. chemicals such as pesticides and organic solvents, as well as heavy me- tals.

INUSpherese® then enhanced this by also removing pathological proteins and immune complexes, metabolic waste, infection toxins, allergens, and inflammatory messengers.
Blood-plasma purification, also known as plasmapheresis (from the Greek apherein = to separate), helps the body eliminate harmful proteins and metabolic products (e.g. cholesterol, etc.) or other toxic loads (paraproteins, circulating immune complexes, complex infection toxins, pathoproteins, haptens) and restore dysregulated metabolisms and inflammatory cascades/ the immune system to their natural equilibrium (metabolic/immunomodulation), re-activating the body's self-healing powers.
Blood is taken and restored via the arm veins using special cannulas. Treatment takes approx. two hours, and is performed by the Alpstein Clinic's specially trained and qualified medical staff and assistants. There are three different types of filters, whose efficacy has been proven in clinical studies. The process is considered very effective with a high degree of tolerance.
The principle of the INUSpheresis® is shown in the next figure.



Graphic: Alpstein Clinic, own diagram

The success proves us right

Of course, it is also possible to measure the efficiency of the INUSpheresis® system by measurement the content of filtrated out toxins into the filter product eluate using the same panel of IGL laboratory. The following figure is demonstrating one example.

before INUSpheresis® (blood)				after INUSpheresis® (eluate)			
1	Acrolein	borderline	190,6 nmol/l	1	Acrolein	very high	545,2 nmol/l
2	Aflatoxin (B1)	borderline	179,2 nmol/l	2	Aflatoxin (B1)	very high	533,1 nmol/l
3	Aluminium	tolerable	138,5 nmol/l	3	Aluminium	borderline	299,2 nmol/l
4	Arsenic	tolerable	57,8 nmol/l	4	Arsenic	high	442,8 nmol/l
5	Benzene	very high	501,9 nmol/l	5	Benzene	borderline	185,6 nmol/l
6	Benzidine	high	327,1 nmol/l	6	Benzidine	tolerable	149,5 nmol/l
7	Benzo[a]pyrene	borderline	180,8 nmol/l	7	Benzo[a]pyrene	high	392,3 nmol/l
8	Beryllium	tolerable	142,2 nmol/l	8	Beryllium	borderline	215,5 nmol/l
9	Bisphenol A	tolerable	50,2 nmol/l	9	Bisphenol A	very high	470,0 nmol/l
10	Cadmium	very high	521,7 nmol/l	10	Cadmium	high	398,6 nmol/l
11	Chromium-VI	tolerable	136,4 nmol/l	11	Chromium-VI	high	417,7 nmol/l
12	Cobalt	high	329,1 nmol/l	12	Cobalt	borderline	258,4 nmol/l
13	Cyanide	borderline	255,0 nmol/l	13	Cyanide	high	401,4 nmol/l
14	Diazine	borderline	258,2 nmol/l	14	Diazine	high	426,7 nmol/l
15	Dichlordipehyltrichlorethane (DDT)	tolerable	39,5 nmol/l	15	Dichlordipehyltrichlorethane (DDT)	borderline	274,8 nmol/l
16	Disulfoton	tolerable	72,3 nmol/l	16	Disulfoton	borderline	179,0 nmol/l
17	Glyphosate / AMPA	tolerable	57,7 nmol/l	17	Glyphosate / AMPA	tolerable	66,0 nmol/l
18	Lead	tolerable	48,9 nmol/l	18	Lead	borderline	277,0 nmol/l
19	Lindane	very high	586,1 nmol/l	19	Lindane	borderline	186,1 nmol/l
20	Mercury inorganic	borderline	175,4 nmol/l	20	Mercury inorganic	tolerable	102,3 nmol/l
21	Mercury organic (group)	borderline	168,4 nmol/l	21	Mercury organic (group)	high	400,7 nmol/l
22	Polychlorinated-Biphenyl (PCB)	very high	469,6 nmol/l	22	Polychlorinated-Biphenyl (PCB)	tolerable	117,9 nmol/l
23	Polycyclic-aromatic-hydrocarbons (PAH)	very high	588,7 nmol/l	23	Polycyclic-aromatic-hydrocarbons (PAH)	high	362,9 nmol/l
24	Titanium	tolerable	24,6 nmol/l	24	Titanium	borderline	199,8 nmol/l
25	Vinyl-Chloride	very high	545,4 nmol/l	25	Vinyl-Chloride	tolerable	24,0 nmol/l
26	Xylene	tolerable	50,8 nmol/l	26	Xylene	very high	555,1 nmol/l
27	Zirconium	tolerable	122,2 nmol/l	27	Zirconium	very high	545,7 nmol/l

Comparison between iEC analysis before INUSpheresis® (left) and the concentration into the filter product (right)

Finally, we started to test the toxin level follow up some weeks after the cleansing method INUSpheresis®. Within the next six months the data base assessment of over 50 patients should be finished and will be published.

The last figure gives an example of one patient (62-years old) suffering from a severe chronic fatigue and neuropathy since a long time. He has tried a lot of conventional and also integrative and alternative methods to find improvement. He got also many chelation treatments and is using a big amount of supplements. But nothing has helped. The INUSpheresis after targeted toxin analysis using the new laboratory has brought the breakthrough. Step by step he is feeling better and more energized. Beside a lot of “Top 27” toxins we found especially radioactive load from Uran 235. After two INUSpheresis® the general toxic load was diminished from 8108 nmol/l to 4052 nmol/l. The reduction due to the cleansing was 50.1 percent! And we were delighted that also Uran 235 was significantly diminished.

before INUSpheresis® (blood)

iEC - intracellular Electrical Capacity - in Lymphocytes

1	Acrolein	very high	535,4	nmol/l
2	Benzene	high	366,8	nmol/l
3	Benzo[a]pyrene	high	376,7	nmol/l
4	Cyanide	borderline	275,8	nmol/l
5	Polycyclic-aromatic-hydrocarbons(PAH)	tolerable	86,6	nmol/l
6	Xylene	high	448,6	nmol/l
7	Benzidine	high	423,3	nmol/l
8	Diazine	tolerable	50,7	nmol/l
9	Alumimium	tolerable	72,5	nmol/l
10	Arsenic	borderline	177,1	nmol/l
11	Beryllium	borderline	261,5	nmol/l
12	Cadmium	very high	514,0	nmol/l
13	Chrom-VI	borderline	238,3	nmol/l
14	Cobalt	borderline	187,4	nmol/l
15	Lead	borderline	242,7	nmol/l
16	Mercury-inorganic	high	350,7	nmol/l
17	Mercury-organic (group)	borderline	194,2	nmol/l
18	Titanium	tolerable	23,3	nmol/l
19	Zirconium	borderline	260,4	nmol/l
20	Glyphosat / AMPA	very high	586,4	nmol/l
21	Disulfoton	very high	473,7	nmol/l
22	Dichlordipehyltrichlorethane (DDT)	tolerable	124,6	nmol/l
23	Lindane	borderline	201,7	nmol/l
24	polychlorinated-Biphenyl (PCB)	borderline	217,9	nmol/l
25	Bisphenol A	very high	533,6	nmol/l
26	Vinyl-chloride	high	361,5	nmol/l
27	Aflatoxine	tolerable	104,7	nmol/l
3	Uran-235	very high	573,8	nmol/l

after INUSpheresis® (blood)

iEC - intracellular Electrical Capacity - in Lymphocytes

1	Acrolein	tolerable	139,4	nmol/l
2	Aflatoxin (B1)	borderline	215,5	nmol/l
3	Aluminium	tolerable	47,2	nmol/l
4	Arsenic	borderline	192,2	nmol/l
5	Benzene	borderline	224,9	nmol/l
6	Benzidine	borderline	195,4	nmol/l
7	Benzo[a]pyrene	tolerable	38,0	nmol/l
8	Beryllium	tolerable	143,0	nmol/l
9	Bisphenol A	tolerable	59,6	nmol/l
10	Cadmium	tolerable	69,2	nmol/l
11	Chromium-VI	borderline	169,8	nmol/l
12	Cobalt	borderline	183,8	nmol/l
13	Cyanide	borderline	195,6	nmol/l
14	Diazine	borderline	206,5	nmol/l
15	Dichlordipehyltrichlorethane (DDT)	tolerable	5,9	nmol/l
16	Disulfoton	tolerable	81,0	nmol/l
17	Glyphosate / AMPA	tolerable	95,8	nmol/l
18	Lead	borderline	234,7	nmol/l
19	Lindane	tolerable	70,3	nmol/l
20	Mercury inorganic	tolerable	13,3	nmol/l
21	Mercury organic (group)	tolerable	77,9	nmol/l
22	Polychlorinated-Biphenyl (PCB)	borderline	176,8	nmol/l
23	Polycyclic-aromatic-hydrocarbons (PAH)	borderline	249,4	nmol/l
24	Titanium	tolerable	111,8	nmol/l
25	Vinyl-Chloride	borderline	238,8	nmol/l
26	Xylene	tolerable	103,3	nmol/l
27	Zirconium	borderline	230,0	nmol/l
28	Uran-235	borderline	271,8	nmol/l

iEC toxin analysis before and 6 weeks after two sessions of INUSpheresis®

Perspective view

The decribed method of environmental toxin analysis using lymphocytes means an innovative analysis with a high-grade accuracy. This will increase the acceptance of our findings a lot and is recommended to become a basic standard in bioregulatory, integrative and causative working centers.

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Literature and Links

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