Case Study #1


arminlabs
DIAGNOSING TICK-BORNE DISEASES


ANM
ACADEMY OF NUTRITIONAL MEDICINE

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DIAGNOSING TICK-BORNE DISEASES

ArminLabs GmbH
Zirbelstr. 58, 2nd floor
86154 Augsburg
GERMANY

Coinfections-Checklist

Name, first name [redacted] Date (DD/MM/YYYY) .....

▶	Actual and former symptoms Please mark with a cross	X	Score-Points (filled in by physician/naturopath)	Ranking
1	Stomach ache, gut problems	X	Ehrlichia: 8	3
2	Anaemia	X	Babesia: 8	3
3	Diarhoea intermittent		Rickettsia: 9	2
4	Fever or feverish feeling	X	Bartonella: 8	3
5	Lack of concentration, memory disturbance, forgetfulness	X	Chl.pneumoniae: 9	2
6	Encephalitis/Inflammation of the brain (NMR)	X	Chl.trachomatis: 5	
7	Yellowish colour of the skin/eyes	X	Yersinia: 6	
8	Painful joints, swollen joints	X	Mykoplasma: 7	
9	General aches and pains, tendon problems	X	Coxsackie-Virus: 9	2
10	Flu-like symptoms intermittent		EBV/CMV: 11	1
11	Rash(es)	X		
12	Small red/purple spots of the skin	X		
13	Heart problems, disturbance of cardiac rhythm	X		
14	Cough, expectoration			
15	Headache	X		
16	Impaired liver function/ liver laboratory values			
17	Pneumonia, bronchitis			
18	Swollen lymph nodes	X		
19	Tonsilitis	X		
20	Enlargement of the spleen	X		
21	Fatigue / exhaustion, intermittent or chronic CFS	X		
22	Muscle pain, muscle weakness	X		
23	Shivering, chill	X		
24	Blurred, foggy, cloudy, flickering, double vision	X		
25	Nausea, vomiting			
26	Dark urine	X		
27	Itching or pain when urinating			

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DIAGNOSING TICK-BORNE DISEASES

ArminLabs GmbH

ArminLabs GmbH - Zirbelstr.58 2nd floor, 86154 Augsburg, Germany

Patient: [redacted] M

Date of birth:	Date of Reception:	Date of Report:	Barcode-ID:	Physician:
[redacted]	09/22/2016	09/28/2016	839176407	

Material: CPDA, Heparin, EDTA, Serum

FINAL REPORT

Analysis		Result	Units	Reference Range
Blood count				
Leucocytes		5.52	Gpt/l	4.00-10.00
Erythrocytes		5.29	Gpt/l	4.50-5.80
Hemoglobin		15.2	g/dl	14.0-18.0
Hematocrit		48.8	%	42.0-52.0
MCV		92	fl	82-98
MCH		29	pg	27-31
MCHC	-	31	g/dl	32-36
Thrombocytes		231	Gpt/l	140-400
Differential Blood count				
Neutroph. Granulocytes		67.60	%	40.00-75.00
Lymphocytes		22.20	%	17.00-47.00
Monocytes		6.00	%	4.00-12.00
Eosin. Granulocytes		2.80	%	< 7.00
Basoph. Granulocytes		0.50	%	< 1.50
Others		1.00	%	
CD 57 Flow Cytometry				
T cells CD3 + (%)	+	80.32	%	62-80
T cells CD3 + (absolute)		984	/ul	900-1900
NK cells CD56+CD3- (%)		9.40	%	6-29
NK cells CD56+CD3- (absolute)		115	/ul	60-700

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[redacted]	09/22/2016	09/28/2016	839176407	

CD 57 + NK-cells (%)		68.41	%	2-77
CD 57 + NK-cells (absolute)	-	79	/ul	100-360

The CD57-cell-count indicates chronic immune suppression, which can be caused by Borrelia burgdorferi or other bacteria like Chlamydia/Mycoplasma pneumoniae.

Borrelia burgdorferi Elispot

Borrelia burgdorferi Full Antigen	1	SI
Borrelia b. OSP-Mix (OSPA/OSPC/DbpA)	1	SI
Borrelia burgdorferi LFA-1	1	SI

>3 = positive
2-3 = weak positive
<2 = negative

The results of the EliSpot-Tests are no indication for a current cellular activity against Borrelia burgdorferi.

Explanation of antigens:

- Borrelia burgdorferi Full Antigen: Borrelia b. B31-reference strain (Borrelia b sensu stricto)
- Borrelia burgorferi Peptide-Mix: OspA from Borrelia b. sensu stricto, Borrelia afzelii, Borrelia garinii + OspC native + DbpA recombinant
- Borrelia burgdorferi LFA-1 (Lymphocyte Function Antigen 1): Own body protein + Borrelia burgdorferi sensu stricto (shared epitope). Often associated with autoimmune diseases: collagenosis, Rheumatoid Arthritis, vasculitis. If positive or borderline positive look at: ANA, CCP-antibodies, ANCA.

  (Native : cultured antigens/ Recombinant: genetic technology produced)

Attention: New reference range since 1st September 2016!

Borrelia burgdorferi C-6 ELISA

Borrelia burgdorferi C-6-ELISA	<0.24	Index	<0.9

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Patient: [redacted] M

Date of birth:	Date of Reception:	Date of Report:	Barcode-ID:	Physician:
[redacted]	09/22/2016	09/28/2016	839176407	

Borrelia burgdorferi antibodies SeraSpot (Microarray)		
Borrelia burgdorferi SeraSpot IgG	negative	negative
Borr. SeraSpot VlsE (B.b. afzelii)	negative	negative
Borr. SeraSpot p39 (B.b. afzelii)	negative	negative
Borr.SeraSpot p58 (B.b. garinii)	negative	negative
Borr.SeraSpot p100 (B.b. garinii)	negative	negative
Borr.SeraSpot OspC (B.b. afzelii)	negative	negative
Borr.SeraSpot OspC (B.b. garinii)	negative	negative
Borr.SeraSpot OspC (B.b. sensu stricto)	negative	negative
Borr.SeraSpot dbpA (B.b. afzelii)	negative	negative
Borr.SeraSpot dbpA (B.b. garinii)	negative	negative
Borr.SeraSpot dbpA (B.b. sensu stricto)	negative	negative
Borrelia burgdorferi SeraSpot IgM	negative	negative
Borr. SeraSpot VlsE (B.b. afzelii)	negative	negative
Borr. SeraSpot p39 (B.b. afzelii)	negative	negative
Borr.SeraSpot p58 (B.b. garinii)	negative	negative
Borr.SeraSpot p100 (B.b. garinii)	negative	negative
Borr.SeraSpot OspC (B.b. afzelii)	negative	negative
Borr.SeraSpot OspC (B.b. garinii)	negative	negative
Borr.SeraSpot OspC (B.b. sensu stricto)	negative	negative
Borr.SeraSpot dbpA (B.b. afzelii)	negative	negative

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Patient: [redacted] M

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[redacted]	09/22/2016	09/28/2016	839176407	

Borr.SeraSpot dbpA (B.b. garinii)	negative	negative
Borr.SeraSpot dbpA (B.b. sensu stricto)	negative	negative

The specific Borrelia burgdorferi-IgG/IgM-antibodies are no indication for a humoral immune response against Borrelia burgdorferi. Please look at the results of the Borrelia-EliSpot and the CD57-positive NK-cells. Take into consideration the clinical symptoms and the differential diagnosis (co-infections).

Ehrlichia/Anaplasma EliSpot

Ehrlichia/Anaplasma-EliSpot	(+) 2	SI	

>3 = positive
2-3 = weak positive
<2 = negative

The result of the EliSpot-Test is an indication for a weak current cellular activity against Ehrlichia/Anaplasma.
Attention: New reference range since 1st September 2016!

Anaplasma phagocytophilum antibodies

Anaplasma phagocytophilum IgG-antibodies	< 1:64	< 1:64
Anaplasma phagocytophilum IgM-antibodies	< 1:20	< 1:20

No serological evidence for an infection with Anaplasma.
Please look at the Ehrlichia/Anaplasma-Elispot for the current cellular activity.

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Patient: [redacted] M

Date of birth:	Date of Reception:	Date of Report:	Barcode-ID:	Physician:
[redacted]	09/22/2016	09/28/2016	839176407	

Bartonella antibodies

Bartonella-quintana-IgG-IFT	< 1:64	Titer	< 1:64
Bartonella-quintana-IgM-IFT	< 1:20	Titer	< 1:20
Bartonella-henselae-IgG-IFT	< 1:64	Titer	< 1:64
Bartonella-henselae-IgM-IFT	< 1:20	Titer	< 1:20

Serological no evidence for an infection with Bartonella henselae or Bartonella quintana.

Babesia microti antibodies

Babesia microti-IgG-antibodies (IFT)	< 1:16		< 1:16
Babesia microti-IgM-antibodies (IFT)	< 1:20		< 1:20

Serological no evidence for an infection with Babesia microti.

Chlamydia pneumoniae EliSpot

Chlamydia pneumoniae-EliSpot	(+) 2	SI	

>3 = positive
2-3 = weak positive
<2 = negative

The result of the EliSpot-Test is an indication for a weak current cellular activity against Chlamydia pneumoniae.

Attention: New reference range since 1st September 2016!

Chlamydia pneumoniae antibodies

Chlam.pneum.-IgG-antibodies (ELISA)	(+) 0.865	Ratio	< 1.1
		Grey area: 0.8-1.1; Positive: >1.1	
Chlam.pneum.-IgA-antibodies (ELISA)	0.479	Ratio	< 1.1

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The specific weak positive Chlamydia pneumoniae-IgG-antibodies are an indication for a borderline humoral immune response against Chlamydia pneumoniae. Please look at the Chlamydia-EliSpot for the current cellular activity.

Mycoplasma pneumoniae antibodies

Mycoplasma pneumoniae-IgG (EIA)	+	1.676	Ratio	< 0.8
Mycoplasma pneumoniae-IgA (EIA)		0.735	Ratio	< 0.8

The specific M. pneumoniae-IgG-antibodies are an indication for a humoral immune response against Mycoplasma pneumoniae.

Yersinia EliSpot

Yersinia-EliSpot	1	SI	

>3 = positive
2-3 = weak positive
<2 = negative

The result of the Elispot- Test is no indication for a current cellular activity against Yersinia.

Attention: New reference range since 1st September 2016!

Yersinia antibodies

Yersinia-IgG-antibodies (EIA)	+	2.281	Ratio	< 0.8
Yersinia-IgA-antibodies (EIA)	+	1.561	Ratio	< 0.8

The specific Yersinia-IgG/IgA-antibodies are an indication for a current humoral immune response against Yersinia spp. (recent infection with Yersinia?).

Please look at the actual T-cellular Yersinia activity by the Yersinia Elispot.

We recommend to control the Yersinia-IgG/IgA-antibodies in 2-3 weeks and to look at Yersinia in stool.

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Patient: [redacted] M

Date of birth:	Date of Reception:	Date of Report:	Barcode-ID:	Physician:
[redacted]	09/22/2016	09/28/2016	839176407	

Rickettsia antibodies

Rickettsia IgG-antibodies	< 1:64	Titer	< 1:64
Rickettsia IgM-antibodies	< 1:64	Titer	< 1:64

No serological evidence of an infection with Rickettsia.

Epstein-Barr-Virus EliSpot

EBV-EliSpot (lytic)	+ 14	SI	
EBV-EliSpot (latent)	+ 7	SI	

>3 = positive
2-3 = weak positive
<2 = negative

The results of the EBV-EliSpot-Tests are an indication for a current cellular activity against Epstein-Barr-Virus.
Attention: New reference range since 1st September 2016!

Epstein-Barr-Virus antibodies

EBV-IgG-antibodies (IFT)	+ positive	negative
EBV-IgM-antibodies (IFT)	negative	negative
EBV-Early Antigen (IFT)	+ positive	negative
EBV-EBNA1-IgG-antibodies (IFT)	+ positive	negative
EBV-Avidity	high	

The specific EBV-Virus-IgG-, EBV-Early Antigen and EBV-EBNA-antibodies are an indication for a humoral immune-response against Epstein-Barr-Virus.

Please look at the result of the current T-cellular EBV-activity by the EBV-EliSpot.

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Patient: [redacted] M

Date of birth:	Date of Reception:	Date of Report:	Barcode-ID:	Physician:
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Herpes Simplex Virus 1 / 2 EliSpot

Herpes Simplex Virus 1 Elispot	(+) 3	SI	
Herpes Simplex Virus 2 Elispot	(+) 2	SI	

>3 = positive
2-3 = weak positive
<2 = negative

The results of the Herpes Simplex Virus 1 / 2-EliSpot-Tests are an indication for a weak current cellular activity against Herpes Simplex Virus 1 / 2.

Cross-reactions within Herpes Simplex Virus 1 / 2 – subtypes are possible.

Attention: New reference range since 1st September 2016!

Herpes Simplex Virus 1 / 2 antibodies

Herpes Simplex Virus 1 / 2 -IgG- antibodies (EIA)	+ 2.085	Ratio	< 0.8
Herpes Simplex Virus 1 / 2 - IgA-antibodies (EIA)	+ 1.581	Ratio	< 0.8
Herpes Simplex Virus 1 / 2- IgM- antibodies (EIA)	0.204	Ratio	< 0.8

The specific Herpes Simplex Virus 1 / 2-IgG- and -IgA-antibodies are an indication for a humoral immune response against Herpes Simplex Virus 1 / 2. This can be a sign for a reactivation.

We recommend to control the Herpes Simplex Virus 1 / 2 -IgG/IgA/IgM-antibodies in 2-3 weeks.

Please look at the result of the current T-cellular Herpes Simplex Virus 1 / 2 -activity by the Herpes Simplex Virus 1 / 2 -EliSpot.

Cytomegalo Virus EliSpot

CMV-EliSpot	+ 32	SI	

>3 = positive
2-3 = weak positive
<2 = negative

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Patient: [redacted] M

Date of birth:	Date of Reception:	Date of Report:	Barcode-ID:	Physician:
[redacted]	09/22/2016	09/28/2016	839176407	

The result of the EliSpot-Test is an indication for a current cellular activity against Cytomegalo-Virus.

Attention: New reference range since 1st September 2016!

Cytomegalo-Virus

Cytomegalo-Virus-IgG- antibodies (EIA)	+	3.725	Ratio	< 0.8
Cytomegalo-Virus-IgM- antibodies (EIA)		0.151	Ratio	< 0.8

The specific Cytomegalo-Virus-IgG-antibodies are an indication for a humoral immune response against Cytomegalo-Virus.

Please look at the result of the current T-cellular CMV-acitivity by the CMV-EliSpot.

Coxsackie-Virus antibodies

Coxsackie-Virus Type A7-IgG (IFT)	+	1:1000	Titer	< 1:100
Coxsackie-Virus Type B1-IgG (IFT)	+	1:1000	Titer	< 1:100
Coxsackie-Virus Type A7-IgA (IFT)	+	1:10	Titer	< 1:10
Coxsackie-Virus Type B1-IgA (IFT)	+	1:10	Titer	< 1:10

The specific Coxsackie-Virus Type A7/B1-IgG-/IgA-antibodies are an indication for a current humoral immune response against Coxsackie-Virus Type A7 and Coxsackie-Virus Type B1.

HHV 6-Virus antibodies

HHV6-IgG-antibodies (IFT)	+	1:10	Titer	< 1:10
HHV6-IgM-antibodies (IFT)		<1:10	Titer	< 1:10

The specific Human Herpes Virus 6 (HHV6)-IgG-antibodies are an indication for a humoral immune response against Human Herpes Virus 6.

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Patient: [redacted] M

Date of birth:	Date of Reception:	Date of Report:	Barcode-ID:	Physician:
[redacted]	09/22/2016	09/28/2016	839176407	

Candida antibodies			
Candida-IgA-antibodies (EIA)	< 60	U/ml	< 60
Candida-IgG-antibodies (EIA)	< 40	U/ml	< 40
Candida-IgM-antibodies (EIA)	< 60	U/ml	< 60

Serological no evidence for an infection with Candida species.

Antinuclear antibodies			
ANA (IFT)	<1:100	Titer	< 1:100

Thyroid gland hormones			
TSH	1.20	ulU/ml	0.30 - 4.00
Free T3	3.3	ng/l	2.2 – 4.5
Free T4	1.4	ng/dl	0.7 – 1.6

Report validated by

Armin Schwarzbach MD PhD

Specialist for laboratory medicine

Case Study #2


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DIAGNOSING TICK-BORNE DISEASES


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Client age: 36

Sex: female

Diagnosis: ME aged 25

She has been in poor health for over 10 years. Despite testing finding some issues in the past, most notably, kryptopyrroles and reduced mitochondria function, her progress has been very limited. This prompted recent testing. AONM co-infection questionnaire produced very few ticks against the symptoms, so only Borrelia was tested.

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Other symptoms:

Vasovagal syncope since aged 13 but only 4 episodes and none since ME diagnosis.

- Fatigue
- Loss of Concentration
- Memory and mental fatigue
- Muscle pain
- Depression and anxiety
- Sleep problems (in that order)
- High sensitivity to nutritional supplements so progress can be slow

Previous test results:

- Raised kryptopyrroles
- Reduced mitochondria function (Acumen testing)
- No raised toxic metals (unchallenged urine test)
- Reduced cortisol

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Analysis	Result	Units	Reference Range	Chart
Haematology				
4 Blood count				
4 Leucocytes	5,57	Gpt/l	4,00 - 10,00	[..*.....]
4 Erythrocytes	4,91	Tpt/l	4,00 - 5,00	[.......*]
4 Hemoglobin	15,0	g/dl	12,0 - 16,0	[......*.]
4 Hematocrit	46,6	%	37,0 - 47,0	[.......*]
4 MCV	95	fl	82 - 98	[......*.]
4 MCH	31	pg	27 - 31	[.......*]
4 MCHC	32	g/dl	32 - 36	[*.......]
4 Thrombocytes	248	Gpt/l	140 - 400	[...*....]
4 Differential Blood count				
4 Neutroph. Granulocytes	55,30	%	40,00 - 75,00	[...*....]
4 Lymohocytes	34,60	%	17,00 - 47,00	[....*...]
4 Monocytes	6,80	%	4,00 - 12,00	[..*.....]
4 Eosin. Granulocytes	1,30	%	< 7,00	[.*.....]
4 Basoph. Granulocytes	0,30	%	< 1,50	[.*.....]
4 Others	1,50	%		
Borrelia EliSpot				
1 Borrelia b. Full Antigen	1	SI		
1 Borrelia b. OSP-Mix	2	SI		
1 Borrelia burgdorferi LFA-1	1	SI		

0-1 = negative
2-3 = weak positive
> 3 = positive

The results of the Elispot-Tests are an indication for a weak current cellular activity against Borrelia-burgdorferi.

Explanation of antigens:
Borrelia-burgdorferi Full Antigen: Borrelia burgdorferi B31 reference strain (Borrelia b sensu stricto)
Borrelia-burgdorferi Peptide Mix: OspA from Borrelia b. sensu stricto, Borrelia afzelii, Borrelia garinii + OspC native + DbpA recombinant.

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CD3-/CD57+ Cells

4 CD3-/CD56+ Flow Cytometry					
4 T cells CD3+ (%)	**-**	**56,95 %**	**62,00 - 80,00**	**<***	**.....**]
4 T cells CD3+ (absolute)		1098 /ul	900 - 1900	[	.*.....]
4 NK cells CD56+ CD3- (%)		27,30 %	6,00 - 29,00	[	.....*]
4 NK cells CD56+ CD3- (absolute)		526 /ul	60 - 700	[	....*..]
4 CD57+ NK-cells (%)		55,01 %	2,00 - 77,00	[	....*..]
4 CD57+ NK-cells (absolute)		289 /ul	100 - 360	[	....*..]

The result of the CD57-cell count indicates no chronic immune-suppression.

validated by

Dr.Armin Schwarzbach

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Still pretty much housebound and having to carefully pace, needs a wheelchair if going out and needs to walk any distance.

I have started with Burbur and Pinella only for the first 4 weeks and I am thinking of doing a reduced protocol

Questions:

1. Are these results significant to explain her lack of progress and supplement sensitivity?

2. Are you aware and can you explain the link between Lyme and kryptopyrroluria?

Case Study #3


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DIAGNOSING TICK-BORNE DISEASES


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Client age: 34
Sex: female
Diagnosis: ME since aged 20

She has been in poor health for over 10 years. Grew up in Kenya and had malaria a few times and Blackwater fever when she was 12.

She lived in Kenya and South Africa, before coming to the UK aged 15 and has since worked in Italy and France.

- **<u>Main symptoms:</u>**

- Fatigue and exhaustion, is mainly housebound though able to go on holiday to do nothing when she gets there and take 3 – 4 days to get over the journey (normally a short haul flight)

- Has had IBS in the past, now quite good, controlled by the Specific Carbohydrate Diet

- Brain fog

- Regular headaches and migraines

- Deteriorating eye sight

- Heart dysrhythmia

Previous test results:

- Raised cortisol
- Raised gut yeast and opportunistic bacteria
- Raised aluminium, barium, cobalt, copper, lead, manganese, mercury, thallium and zinc
- Low mitochondria function
- Low magnesium

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DIAGNOSING TICK-BORNE DISEASES

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	Analysis		Result	Unit	Reference Range	Chart
	Haematology					
1	Blood count					
1	Leucocytes		5,26	Gpt/l	4,00 - 10,00	[.*.....]
1	Erythrocytes		4,69	Tpt/l	4,00 - 5,00	[.....*..]
1	Hemoglobin		15,0	g/dl	12,0 - 16,0	[......*.]
1	Hematocrit		45,2	%	37,0 - 47,0	[......*.]
1	MCV		96	fl	82 - 98	[.......*]
1	**MCH**	**+**	**32**	**pg**	**27 - 31**	**[........ *>**
1	MCHC		33	g/dl	32 - 36	[..*.....]
1	Thrombocytes		267	Gpt/l	140 - 400	[...*....]
1	Differential Blood count					
1	Neutroph. Granulocytes		66,80	%	40,00 - 75,00	[......*.]
1	Lymohocytes		25,70	%	17,00 - 47,00	[..*.....]
1	**Monocytes**	**-**	**3,60**	**%**	**4,00 - 12,00**	**<* ....]**
1	Eosin. Granulocytes		1,50	%	< 7,00	[.*.....]
1	Basoph. Granulocytes		0,30	%	< 1,50	[.*.....]
1	Others		2,00	%		
	Borrelia EliSpot					
4	Borrelia b. Full Antigen		2	SI	< 2	[.......*]
4	Borrelia b. OSP-Mix		0	SI	< 2	[*.....]
4	Borrelia burgdorferi LFA-1		0	SI	< 2	[*.....]

The results of the Elispot-Tests are an indication for a weak current cellular activity against Borrelia-burgdorferi.

Explanation of antigens:
Borrelia-burgdorferi Full Antigen: Borrelia b. B31 reference strain (Borrelia b sensu stricto)
Borrelia-burgdorferi Peptid-Mix: OspA from Borrelia b. sensu stricto, Borrelia afzelii, Borrelia garinii + OspC native + DbpA recombinant.
Borrelia-burgdorferi LFA-1 (Lymphocyte Function Antigen 1) Own body protein + Borrelia burgdorferi sensu stricto (shared epitope). Often associated with autoimmune diseases: collagenosis, Rheumatoid Arthritis,

CD3-/CD57+ Cells

1	LYMPHOZYTEN-DIFFERENZIERUNG				
1	T cells CD3+ (%)	68,91 %	62,00 - 80,00	[...*....]
1	T cells CD3+ (absolute)	932 /ul	900 - 1900	[*.....]
1	NK cells CD56+ CD3- (%)	18,12 %	6,00 - 29,00	[....*...]
1	NK cells CD56+ CD3- (absolute)	245 /ul	60 - 700	[..*.....]
1	CD57+ NK-cells (%)	57,80 %	2,00 - 77,00	[.....*..]
1	CD57+ NK-cells (absolute)	142 /ul	100 - 360	[.*.....]

The result of the CD57-cell count indicates no chronic immune-suppression.

Chlamydia pneumoniae EliSpot

4	**Chlamydia pneumoniae-EliSpot**	**+**	**4 SI**	**< 2**	**[..... *>**

The result of the EliSpot-Test is an indication for a current cellular activity against Chlamydia pneumoniae.

EBV EliSpot (lytic+latent)

4	**EBV EliSpot (lytic)**	**+**	**11 SI**	**< 2**	**[..... *>**
4	EBV EliSpot (latent)		1 SI	< 2	[....*...]

The results of the EliSpot-Test are an indication for a current cellular activity against EBV.

Explanation of EBV antigens
EBV-lytic antigen: sign for production of infectious virions
EBV-latent antigen: sign for latency with no production of infectious virions

Coxsackie IgG-/IgA-antibodies

6	**Coxsackie-Virus IgG A7 (IFT)**	**+**	**1:3200**	**< 1:100**	**[..... *>**
6	**Coxsackie-Virus IgG B1 (IFT)**	**+**	**1:3200**	**< 1:100**	**[..... *>**
6	**Coxsackie-Virus IgA A7 (IFT)**	**+**	**1:320**	**< 1:10**	**[..... *>**
6	**Coxsackie-Virus IgA B1 (IFT)**	**+**	**1:320**	**< 1:10**	**[..... *>**

The specific Coxsackie-Virus-IgG-/IgA-antibodies are an indication for a current humoral immune response against Coxsackie-Virus Type A7 and Coxsackie-Virus Type B1.

I still just have her on Burbur and Pinella preparing for the Cowden protocol, I intend to include viral support in the form of Takuna.

She is currently concerned about her boyfriend who has not been in good health recently with increasing fatigue and is concerned he may have contracted Lyme through sexual contact with her.

Completing the co-infection questionnaire indicated possible Chlamydia pneumoniae, EBV and Cox-Sackie so these were included in the test

My questions are:

1. What are your views on the varying forms of borrelia transmission?

Chlamydia pneumoniae, EBV and Cox-Sackie were the 3 of the highest on the co-infection questionnaire, but actually they were all very high scoring over 7. I worked with AONM to reduce the list as Ehrichia, Bartonella and Chlamydia Trachomatis also scored 9 and 10.

2. How do you work out where to draw the line and how much overlap is there in treatment, so once you have identified 1 you don't need to worry about any others as it won't change your protocol?

3. **After how long is appropriate before retesting?**

Case Study #4

Client age: 39
Sex: female
Diagnosis: ME aged 24

Illness started gradually at the end of 6 years at university, anxiety around deadlines, long hours and general feeling of run down.

Feeling isolated on course and lack of support.

No known history of a tick bite but did like to be outdoors as felt “trapped indoors” when she was studying.

Other symptoms:

- Hungry all the time (gaining weight)
- Brain fog
- Dizzy
- Anxious
- Gut issues
- Pain in joint and muscles
- Vulvodynia / vestibulidynia (possible lichen schlerosis . lichen planus since aged 15)
- Tietze's syndrome (from age 20)Sciatica (from age 15)

Previous test results:

- Glandular fever (aged 15)
- Food intolerance
- Kryptopyrrole (managed with B6 and Zn)
- SIBO – mild SIBO (addressed through specific carbohydrate diet)
- Stool test – blastocystis hominis, moderate enterobacter amnigenus and heavy streptococcus
- ASI – high first cortisol, very low for next 3

Previous test results (continued)

- Organic acids – high B2, but poor utilisation of B2 and low coQ10, low serotonin, high kynurenic acid (tryptophan metabolism), low folate, increased metabolism of fatty acids, low B6, low glutathione
- Vitamin D – in range
- B vitamins (a later test than earlier ones, B1 low, B2 borderline low, B6 in range)
- Mitochondria – low production and recycling of ATP. Blockages on translocator by internally generated metabolites, low Mn,

CD 57 + NK-cells (%)		19.19	%	2-77
CD 57 + NK-cells (absolute)	-	31	/ul	100-360

The CD57-cell-count indicates chronic immune suppression, which can be caused by Borrelia burgdorferi or other bacteria like Chlamydia/Mycoplasma pneumoniae.

Borrelia burgdorferi Elispot

Borrelia burgdorferi Full Antigen		0	SI	< 2
Borrelia b. OSP-Mix (OSPA/OSPC/DbpA)	+	4	SI	< 2
Borrelia burgdorferi LFA-1		1	SI	< 2

The results of the EliSpot-Tests are an indication for a current cellular activity against Borrelia burgdorferi.

Explanation of antigens:

- Borrelia burgdorferi Full Antigen: Borrelia b. B31-reference strain (Borrelia b sensu stricto)
- Borrelia burgorferi Peptide-Mix: OspA from Borrelia b. sensu stricto, Borrelia afzelii, Borrelia garinii + OspC native + DbpA recombinant
- Borrelia burgdorferi LFA-1 (Lymphocyte Function Antigen 1): Own body protein + Borrelia burgdorferi sensu stricto (shared epitope). Often associated with autoimmune diseases: collagenosis, Rheumatoid Arthritis, vasculitis. If positive or borderline positive look at: ANA, CCP-antibodies, ANCA.

  (Native : cultured antigens/ Recombinant: genetic technology produced)

Ehrlichia/Anaplasma EliSpot

Ehrlichia/Anaplasma-EliSpot	+	3	SI	< 2

The result of the EliSpot-Test is an indication for a current cellular activity against Ehrlichia/Anaplasma.

Anaplasma phagocytophilum antibodies				
Anaplasma phagocytophilum IgG-antibodies		< 1:64		< 1:64
Anaplasma phagocytophilum IgM-antibodies		< 1:20		< 1:20

No serological evidence for an infection with Anaplasma.

Please look at the Ehrlichia/Anaplasma-Elispot for the current cellular activity.

Chlamydia pneumoniae EliSpot				
Chlamydia pneumoniae-EliSpot	+	3	SI	< 2

The result of the EliSpot-Test is an indication for a current cellular activity against Chlamydia pneumoniae.

Coxsackie-Virus antibodies				
Coxsackie-Virus-IgG Type A7 (IFT)	+	1:3200	Titer	< 1:100
Coxsackie-Virus-IgG Type B1 (IFT)	+	1:3200	Titer	< 1:100
Coxsackie-Virus-IgA Type A7 (IFT)	+	1:10	Titer	< 1:10
Coxsackie-Virus-IgA Type B1 (IFT)	+	1:10	Titer	< 1:10

The specific Coxsackie-Virus-IgG-/IgA-antibodies are an indication for a current humoral immune response against Coxsackie-Virus Type A7 and Coxsackie-Virus Type B1.

This client is now quite anxious about what is the quickest way of getting better, wants assurances but also concerned that she can be sensitive to supplements and medications so very worried about reactions to antibiotics.

<u>My questions are:</u>

1. **What are the views on antibiotic use?**

2. **Does Portland (Public Health England) recognise Armin lab testing**

Case Study #5

Patient 'A'

Case Study Example from a patient. Typical of what we (AONM) hear each day……..

- Complained of almost the full range of symptoms on the Burrascano checklist for many years and has been ill for more than 30 years.

- Labelled with fibromyalgia and never investigated beyond routine bloods.

- Six years ago was given the clinical diagnosis of Lyme by an NHS doctor with specialist knowledge of Lyme but as she was just passing through as a locum all she could do was order routine testing (Elisa), which was negative.

- Since then has battled her way through numerous consultants all of whom admitted no knowledge of Lyme but all of whom thought their un-informed opinion that she does not have Lyme should prevail. She had skin and cutaneous nodule biopsies sent to PHE Lab at Porton, where PCR proved negative.

- Had been taking doxycyline 300mg daily at the time of biopsy, and had been for 6 months, assured that this would not affect the test.

- Never had liver function outside the normal range (but only tested twice)

- Has had several episodes of probable pancreatitis following laparoscopic cholecystectomy in 1999 and continues to have episodes of upper right quadrant pain, radiating through to her back; associated with malaise and pale stool, but never jaundice.

Symptoms:

- Consistently below normal body temp which drops further on exercise
- A dramatic Herxheimer response on first starting doxycycline (after 2 weeks), including proprioception problems and the 'where's my arm?' phenomenon.
- Numbness over the V2 distribution of the trigeminal nerve
  sore, gritty eyes, with small dark lesions, possibly inspissated Meibomian glands.
- Raised red malar flush, usually unilateral
- Painful soles of feet on first standing
- A strong sense of being ILL, feeling toxic.
- Muscle fasciculation, Episodes of occulomotor pain

Symptoms (continued):

- She has a number of features characteristic of acrodermatitis chronica atrophicans (but has yet to find a dermatologist who has knowledge of this) :
- Progressive allodynia, now widespread and severe.
- Areas of tissue paper skin on shins, loss of hair over areas of marked dysaesthesia
- Loss of subcutaneous fat on backs of hands, with delayed healing. The biopsies took 9 weeks to heal. A full thickness gouge from a finger just outside the atrophied area healed normally within 5 days.
- Swan neck deformity of all toes, progressing steadily over 10 years, with associated burning and tingling pain.
- Purple areas and patches of 'broken veins'

- Periodontal bone loss in the absence of dental caries or gingivitis, noted by dentist.

- Teeth become loose and slump when she rolls over in bed. They tighten up whilst on doxycline

- Dysmorphic nails, deep transverse trenches (Beau's lines), dark lines (melanonychia) and curving.

- Had consistent eosinophilia for years.

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Short Symptom Checklist for Lyme Borreliosis

Name, first name XXXXXXX ..... Date: XXXXX .....

►	Actual and former symptoms: Please mark with a cross	X
1	Former or recent tick bite	
2	Former or recent bull´s eye rash	
3	Summer flu after tick bite	
4	Fatique/Malaise/ Lethargy	x
5	Loss of physical/mental capacity, general weakness	x
6	Neck-pain, neck stiffness	x
7	Headache	x
8	Painful joints, swollen joints	x
9	General aches and pains, tendon problems	x
10	Muscle pain, muscle weakness	x
11	Fever, feverish feeling, shivering	x
12	Ears: intermittent red, swollen earlap	x
13	Heart problems, disturbance of cardiac rhythm	x
14	Cough, expectoration, breathlessness	x
15	Night sweat	x
16	Sleeplessness, waking up around ..... am / pm	x
17	Tinnitus	x
18	Swollen lymph nodes	x
19	Numbness of the skin	x
20	"Burning" or "pins and needles" skin sensations, painful sole or foot	x
21	Back pain, back stiffness	x
22	Muscle pain, muscle weakness	x
23	Shivering, chill	x
24	Blurred, foggy, cloudy, flickering, double vision	x
25	Aggressiveness, drowsiness, panic attacks, anxiety, mood swings	x
26	Concentration problems, short-term memory loss, forgetfulness	x
27	Skin partly thin, paper-like, transparent, dry	x
	Total number of symptoms for Lyme Borreliosis	24

Antibiotics? When? Which one(s)? How long?

.....

.....

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Coinfections-Checklist

Name, first name XXXXXX Date (DD/MM/YYYY) XXXXXXX

	Actual and former symptoms Please mark with a cross	X	Score-Points (filled in by physician/naturopath)	Ranking
1	Stomach ache, gut problems	☒	Ehrlichia: 10	3
2	Anaemia	☐	Babesia: 5	8
3	Diarhoea intermittent	☒	Rickettsia: 7	6
4	Fever or feverish feeling	☒	Bartonella: 9	4
5	Lack of concentration, memory disturbance, forgetfulness	☒	Chl.pneumoniae: 11	2
6	Encephalitis/Inflammation of the brain (NMR)	☐	Chl.trachomatis: 6	7
7	Yellowish colour of the skin/eyes	☐	Yersinia: 8	5
8	Painful joints, swollen joints	☒	Mycoplasma: 8	5
9	General aches and pains, tendon problems	☒	Coxsackie-Virus: 13	1
10	Flu-like symptoms intermittent	☒	EBV/CMV/HSV: 9	4
11	Rash(es)	☒		
12	Small red/purple spots of the skin	☐		
13	Heart problems, disturbance of cardiac rhythm	☒		
14	Cough, expectoration	☒		
15	Headache	☒		
16	Impaired liver function/ liver laboratory values	☒		
17	Pneumonia, bronchitis	☒		
18	Swollen lymph nodes	☒		
19	Tonsilitis	☒		
20	Enlargement of the spleen	☐		
21	Fatigue / exhaustion, intermittent or chronic CFS	☒		
22	Muscle pain, muscle weakness	☒		
23	Shivering, chill	☒		
24	Blurred, foggy, cloudy, flickering, double vision	☒		
25	Nausea, vomiting	☒		
26	Dark urine	☐		
27	Itching or pain when urinating	☒		

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Case Study #6

Patient 'A's 29yr old Son

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- Patient ‘A’s 29 year old son who has an almost identical history and who has been ill all his life.

- Both he and his mother have been given several diagnoses in the last 5 years, each set of symptoms being considered a separate pathology, the most sensible (Patient A’s words) being Mast Cell Activation Disorder and dysautonomia.

- Both have cardiac arrhythmias including trigeminy and atrial ectopy.

- He has a profound neurally mediated tendency to extreme hypotension, orthostatic, post prandial and in response to baroreceptor irritability, even deflation of a BP cuff can cause problems.

- He also has a demonstrated tendency to the Bezold-Jarisch cardio-inhibitory reflex and can have a BP below 70 systolic with a bradycardia of 40. On tilt table testing he dropped 100mmHg in under a minute, to 53/39 while remaining fully conscious, with a heart rate of 68, which is of course a serious problem.

- He also suffers from air hunger and a dry, brassy cough (both Mother and Son), and gets central sleep apnoea most nights, waking gasping and in terror, with thundering cardiac arrhythmias which occur after the gasping.

- Mother has witnessed this happening, he breaths out normally then just stops.

- “My son has what has been labelled hidradenitis, which began as indurated deep lymph nodes first noted at the age of 5 years, noted as 'possible cat scratch'. He also has large stretch mark type streaks of rash all over his torso which seem like the images I've seen of Bartonella.”