

# Multiple Sclerosis

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**Multiple Sclerosis, myelopathies, polyneuropathies, brain tumor, encephalopathy.** (Neurosurgery.1992May;30(5): 769-73)

1986 (USA): *Relapsing fever/Lyme disease – Multiple sclerosis. Medical Hypotheses, volume 21, issue 3, pages 335-343*

2000 (Poland): *Lyme borreliosis and Multiple sclerosis: Any Connection? A Seroepidemic study. Ann Agric Environ Med. issue 7, 141-143*

2001 (Norway): *Association between Multiple sclerosis and Cystic Structures in Cerebrospinal Fluid. Infect 29:315*

2004 (Switzerland): *Chronic Lyme borreliosis at the root of Multiple sclerosis – is a cure with antibiotics attainable?*

# **Case report: Initial diagnosis of Multiple Sclerosis**

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43-year-old patient, suffering since May 2005 from

- Persistent paraesthesia of the left leg
- 80% blindness of the left eye
- Progressive myalgia
- Recurrent dizziness
- Substantial loss of stamina (high risk of occupational disability)

**Diagnosis by neurologists: MS**

Spinal fluid and laboratory tests were negative (no Borrelia antibody AI, no chronic IgG synthesis in the form of oligoclonal bands in the spinal fluid)

Borrelia IgM/IgGELISA and Immunoblot were tested several times and found to be negative

**Therapy: Corticosteroids increased her symptoms + she suffered bad side-effects from the corticosteroids**

# Case report: Initial findings on 26<sup>th</sup> Oct. 2005 before antibiotic treatment



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Specialist for laboratory medicine

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Patient:

Date of birth:   Date of Reception:   Date of Report:   Barcode-ID:   Physician:

Material: CPDA, Heparin, EDTA, Serum

Analysis	Result	Units	Reference Range
Borrelia burgdorferi antibodies (Westernblot)			
Borrelia-Blot-IgG-antibodies	negative		negative
Borrelia-Blot-IgM-antibodies	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+cell-count.

CD 57 Flow Cytometry

CD 57 + NK-cells (%)	28	%	2-77
CD 57 + NK-cells (absolute)	- 40	/ul	100-360

The CD57-cell-count indicates a chronic immune-suppressive situation, which can be caused by Borrelia burgdorferi.

Borrelia burgdorferi EliSpot

Borrelia burgdorferi Fully Antigen	+	30	SI	< 2
Borrelia b. OSP-Mix (OSPA/OSPC/DbpA)	+	5	SI	< 2
Borrelia burgdorferi LFA-1	+	8	SI	< 2

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

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# Case report: Borrelia EliSpot 8 weeks after Ceftriaxone IV treatment



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Borrelia burgdorferi EliSpot

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

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

By Jan 23<sup>rd</sup>, 2006, the patient was clinically symptom-free and able to work

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## Correct diagnosis: Chronic Neuroborreliosis with Multiple Sclerosis-like symptoms



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# **Multiple Sclerosis: Laboratory tests suggested**

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1. Borrelia SeraSpot + Borrelia EliSpot + CD57-cells
2. Chlamydia pneumonia IgG/IgA antibodies + Chlamydia pneumoniae EliSpot
3. Mycoplasma pneumoniae IgG/IgA antibodies
4. Bartonella IgG/IgM antibodies
5. Coxsackie Virus IgG/IgA antibodies
6. EBV EliSpot
7. CMV EliSpot
8. HHV6 IgG/IgM antibodies

**"90% of chronic fatigue patients  
are Lyme positive."**

(Informal study by American Lyme Disease  
Alliance at [www.lymealliance.org](http://www.lymealliance.org))

## CFS / ME

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1. Borrelia-SeraSpot + Borrelia-EliSpot + CD57-cells
2. Chlamydia pneumoniae IgG/IgA antibodies + Chlamydia pneumoniae EliSpot
3. Mycoplasma pneumoniae IgG/IgA antibodies
4. Bartonella IgG/IgM antibodies
5. Parvovirus B19 IgG/IgM antibodies
6. Coxsackie Virus IgG/IgA antibodies
7. EBV EliSpot
8. CMV EliSpot
9. Herpes Simplex Virus 1 / 2 IgG/IgA/IgM antibodies + Herpes simplex Virus EliSpot
10. HHV 6-IgG/IgM antibodies

## **Alzheimer's Disease**

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**“Pure Lyme dementia exists and has a good outcome after antibiotics. It is advisable to do Lyme serology in demented patients.2**

(Blank et al.: Journal of Alzheimer's disease, Volume 4/2014, 1087-1093)

# Alzheimers / Dementia

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1. Borrelia SeraSpot + Borrelia-EliSpot + CD57 cells
2. Chlamydia pneumoniae IgG/IgA antibodies + Chlamydia pneumoniae EliSpot
3. Mycoplasma pneumoniae IgG/IgA antibodies
4. Coxsackie Virus IgG/IgA antibodies
5. Herpes simplex virus 1 / 2 IgG/IgA/IgM antibodies + Herpes simplex virus EliSpot
6. EBV EliSpot
7. CMV EliSpot

# Parkinsonism

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**"Borrelia can cause Parkinsonism"**  
(Arch.of Path.& Lab.Med.127(9):1204-6)

# Parkinsonism

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1. Borrelia SeraSpot + Borrelia EliSpot + CD57 cells
2. Chlamydia pneumoniae IgG/IgA antibodies + Chlamydia pneumoniae EliSpot
3. Mycoplasma pneumoniae IgG/IgA antibodies
4. Bartonella IgG/IgM antibodies
5. Coxsackie Virus IgG/IgA antibodies
6. EBV EliSpot
7. CMV EliSpot

# **Autism**

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**“20 - 30% of autistic disorders can be caused by Borrelia and 58% by Mycoplasma”**  
**(Bransfield et al.: Med Hypotheses 2008; 70(5):967-74)**

# Autism

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1. Borrelia SeraSpot + Borrelia-EliSpot + CD57-cells
2. Chlamydia pneumoniae IgG/IgA antibodies + Chlamydia pneumoniae EliSpot
3. Mycoplasma pneumoniae IgG/IgA antibodies
4. Bartonella IgG/IgM antibodies
5. Coxsackie Virus IgG/IgA antibodies
6. EBV EliSpot
7. CMV EliSpot
8. ASL titer

# Multiple symptoms = Multiple infections



# MULTIPLE SYMPTOMS = MULTIPLE INFECTIONS

**"Chronic Lyme disease" is an multi infectious disease at a immuno-weakened host**

Symptom selection	Borrelia	Chl. pneumoniae	Chl. trachomatis	Mykoplasma	Bartonella	Ehrlichia	Rickettsia	Yersinia	Babesia	EBV virus	Coxsackie virus
limbs, tendon pain	○										
muscle pain		○									
joint pain			○								
memory- concentration problems				○							
headache					○						
nausea, vomiting						○					
encephalitis							○				
fatigue, exhaustion								○			
feverish feeling									○		
chills, tremors										○	
flu symptoms											○
stomach ache											○
diarrhea											○
jaundice											○
Increased liver values											○
enlargement of the spleen											○
dark urine											○
urination with itching											○
deteriorated seeing											○
heart problems											○
cough											○
pneumonia											○
anemia											○
rash											○
Skin bleeding											○
lymphadenopathy											○
suppurating tonsils, dental probl.											○

# The coinfections checklist for patients, developed by Dr. Schwarzbach



## Coinfections-Checklist

Name, first name ..... 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		Ehrlichia: .....	
2	Anaemia		Babesia: .....	
3	Diarhoea intermittent		Rickettsia: .....	
4	Fever or feverish feeling		Bartonella: .....	
5	Lack of concentration, memory disturbance, forgetfulness		Chl.pneumoniae: .....	
6	Encephalitis/Inflammation of the brain (NMR)		Chl.trachomatis: .....	
7	Yellowish colour of the skin/eyes		Yersinia: .....	
8	Painful joints, swollen joints		Mykoplasma: .....	
9	General aches and pains, tendon problems		Coxsackie-Virus: .....	
10	Flu-like symptoms intermittent		EBV/CMV: .....	
11	Rash(es)			
12	Small red/purple spots of the skin			

# Evaluation template for therapists, developed by Dr. Schwarzbach



## Coinfections Evaluation Template

	Ehrlichia	Babesia	Rickettsia	Bartonella	Chlamidia pneumoniae	Chlamydia trachomatis	Yersinia	Mycoplasma	Coxsackie- Virus	Epstein-Barr- Virus
▼										
	■	■					■	■	■	■
			■		■					
				■		■				
					■					
						■				
							■			
								■		
									■	
										■

# Coinfections checklist: Patient 1

**B.C.**

Name, First name

15th Oct. 2010

Date

►	Symptoms - Please tick the appropriate symptoms (to be filled in by the patient)	X	Score-Points (to be filled in by the physician)	Ranking
01	Stomach-ache	X	Ehrlichia: 5	4
02	Anaemia		Babesia: 5	4
03	Diarhoea		Rickettsia: 5	4
04	Fever or feverish feeling	X	Bartonella: 6	3
05	Lack of concentration, memory disturbance, forgetfulness	X	Chl.pneumoniae: 8	1
06	Encephalitis (Inflammation of the brain)		Chl.trachomatis: 3	6
07	Yellowish colour of the skin (Jaundice)	X	Yersinia: 4	5
08	Painful joints	X	Mykoplasma: 7	2
09	General aches and pains	X	Coxsackie-Virus: 7	2
10	Flu-like symptoms	X	EBV: 6	3
11	Rash			
12	Petechiae			
13	Heart-problems	X		
14	Cough			
15	Headache	X		
16	Impaired liver function/ liver parameters			
17	Pneumonia			
18	Swollen or inflamed lymph nodes			
19	Tonsilitis			
20	Enlargement of the spleen (Splenomegaly)			
21	Fatigue / exhaustion	X		
22	Muscle pain	X		
23	Shivering	X		
24	Blurred vision			
25	Nausea, vomiting	X		
26	Dark urine	X		
27	Painful or icty urinating			

# Laboratory results: Patient 1

	<b>Results</b>	<b>Reference range</b>
<b>Borrelia burgdorferi antibodies</b>		
Borrelia IgG Immunoblot	positive Bands: p39+, p41+, p83+, p58+, p83+, LBb+, VlsE-Bg+, VlsE-Bb+, VlsE-Ba+	negative
Borrelia IgM Immunoblot	negative	negative
<b>Elispot-LTT Borrelia</b>		
Borrelia Full Antigen	+ SI >3	< 2
Borrelia Peptide Mix	+ SI 4	< 2
Borrelia LFA-1	SI 2	< 2
<b>CD3/CD57 NK cells</b>	- 49 /ul	>100 /ul
<b>Chlamydia pneumoniae antibodies</b>		
Chl. pneumoniae IgG EIA*	+ 71.3 RE/ml	< 16.0 = neg.
Chl. pneumoniae IgA EIA*	+ 2.29 ratio	< 0.8 = neg.
<b>Elispot LTT Chlamydia pneumoniae</b>		
Chlamydia pneumoniae	+ SI 46	< 2

\* Enzyme immunoassay



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# Coinfections checklist: Patient 2

**A.K.**  
Name, First name

**27th March 2011**  
Date

►	Symptoms - Please tick the appropriate symptoms (to be filled in by the patient)	X	Score-Points (to be filled in by the physician)	Ranking
01	Stomach-ache		Ehrlichia: 3	3
02	Anaemia		Babesia: 3	3
03	Diarhoea		Rickettsia: 3	3
04	Fever or feverish feeling	X	Bartonella: 4	2
05	Lack of concentration, memory disturbance, forgetfulness		Chl.pneumoniae: 5	1
06	Encephalitis (Inflammation of the brain)		Chl.trachomatis: 3	3
07	Yellowish colour of the skin (Jaundice)		Yersinia: 2	4
08	Painful joints	X	Mykoplasma: 5	1
09	General aches and pains	X	Coxsackie-Virus: 4	2
10	Flu-like symptoms	X	EBV: 3	3
11	Rash			
12	Petechiae			
13	Heart-problems			
14	Cough			
15	Headache			
16	Impaired liver function/ liver parameters			
17	Pneumonia			
18	Swollen or inflamed lymph nodes			
19	Tonsilitis			
20	Enlargement of the spleen (Splenomegaly)			
21	Fatigue / exhaustion	X		
22	Muscle pain	X		
23	Shivering			
24	Blurred vision			
25	Nausea, vomiting			
26	Dark urine			
27	Painful or ichthy urinating			

# Laboratory results: Patient 2

Results	Reference range
<b>Borrelia burgdorferi antibodies</b>	
Borrelia IgG Immunoblot	negative
Borrelia IgM Immunoblot	positive Bands: OspC-Bg/Bb/Ba+, p41+
<b>Borrelia burgdorferi Elispot-LTT</b>	
Borrelia full antigen	+ SI 27
Borrelia peptide mix	SI 1
Borrelia LFA-1	SI 3
<b>CD3/CD57 NK cells</b>	- 41 /ul
	>100 /ul
<b>Chlamydia pneumoniae antibodies</b>	
Chl. pneumoniae IgG EIA	+ 119.0 RE/ml
Chl. pneumoniae IgA EIA	+ 1.62 ratio
<b>Chlamydia pneumoniae Elispot-LTT</b>	
Chlamydia pneumoniae	+ SI 10
<b>Mycoplasma pneumoniae antibodies</b>	
Mycoplasma pn. IgG EIA	+ 71.1 RE/ml
Mycop. pneumoniae IgA EIA	+ 1.2 ratio
<b>Ehrlichia Elispot-LTT</b>	
Ehrlichia	+ SI 3
< 2	

# Coinfections checklist: Patient 3

**F.H.**

Name, First name

12th Apr. 2011  
Date

►	Symptoms - Please tick the appropriate symptoms (to be filled in by the patient)	X	Score-Points (to be filled in by the physician)	Ranking
01	Stomach-ache		Ehrlichia: 6	3
02	Anaemia		Babesia: 4	5
03	Diarhoea		Rickettsia: 4	5
04	Fever or feverish feeling		Bartonella: 3	6
05	Lack of concentration, memory disturbance, forgetfulness	X	Chl.pneumoniae: 8	1
06	Encephalitis (Inflammation of the brain)		Chl.trachomatis: 3	6
07	Yellowish colour of the skin (Jaundice)		Yersinia: 2	7
08	Painful joints	X	Mykoplasma: 7	2
09	General aches and pains	X	Coxsackie-Virus: 3	4
10	Flu-like symptoms		EBV: 3	6
11	Rash			
12	Petechiae			
13	Heart-problems	X		
14	Cough	X		
15	Headache	X		
16	Impaired liver function/ liver parameters			
17	Pneumonia			
18	Swollen or inflamed lymph nodes			
19	Tonsilitis			
20	Enlargement of the spleen (Splenomegaly)			
21	Fatigue / exhaustion	X		
22	Muscle pain	X		
23	Shivering	X		
24	Blurred vision			
25	Nausea, vomiting			
26	Dark urine			
27	Painful or ichthy urinating			

# Laboratory results: Patient 3

	<b>Results</b>	<b>Reference range</b>
<b>Borrelia burgdorferi antibodies</b>		
Borrelia IgG Immunoblot	negative	negative
Borrelia IgM Immunoblot	negative	negative
<b>Borrelia burgdoferi Elispot-LTT</b>		
Borrelia full antigen	+ SI 27	< 2
Borrelia peptide mix	+ SI 7	< 2
Borrelia LFA-1	SI 1	< 2
<b>CD3/CD57 NK cells</b>	- 96 /ul	>100 /ul
<b>Chlamydia pneumoniae antibodies</b>		
Chl. pneumoniae IgG EIA	+ 46.8 RE/ml	< 16.0 = neg.
Chl. pneumoniae IgA EIA	0.35 ratio	< 0.8 = neg.
<b>Chlamydia pneumoniae Elispot-LTT</b>		
Chlamydia pneumoniae	+ SI 13	< 2
<b>Ehrlichia Elispot-LTT</b>		
Ehrlichia	+ SI 24	< 2
<b>ANA (EIA)</b>	+ 43.9 units	< 20

# Coinfections checklist: Patient 4

**B.C.**  
Name, First name

**15th Oct. 2010**  
Date

►	Symptoms - Please tick the appropriate symptoms (to be filled in by the patient)	X	Score-Points (to be filled in by the physician)	Ranking
01	Stomach-ache	X	Ehrlichia: 5	4
02	Anaemia		Babesia: 5	4
03	Diarhoea		Rickettsia: 5	4
04	Fever or feverish feeling	X	Bartonella: 6	3
05	Lack of concentration, memory disturbance, forgetfulness	X	Chl.pneumoniae: 8	1
06	Encephalitis (Inflammation of the brain)		Chl.trachomatis: 3	6
07	Yellowish colour of the skin (Jaundice)	X	Yersinia: 4	5
08	Painful joints	X	Mykoplasma: 7	2
09	General aches and pains	X	Coxsackie-Virus: 7	2
10	Flu-like symptoms	X	EBV: 6	3
11	Rash			
12	Petechiae			
13	Heart-problems	X		
14	Cough			
15	Headache	X		
16	Impaired liver function/ liver parameters			
17	Pneumonia			
18	Swollen or inflamed lymph nodes			
19	Tonsilitis			
20	Enlargement of the spleen (Splenomegaly)			
21	Fatigue / exhaustion	X		
22	Muscle pain	X		
23	Shivering	X		
24	Blurred vision			
25	Nausea, vomiting	X		
26	Dark urine	X		
27	Painful or ichthy urinating			

# Laboratory test results: Patient 4

		<b>Results</b>	<b>Unit</b>	<b>Reference range</b>
<b>Borrelia burgdorferi antibodies (ELISA)</b>				
Borrelia IgG antibodies (ELISA)	+	<b>71.9</b>	RU/ml	< 16=neg. >22.0=pos.
Borrelia IgM antibodies (ELISA)		4.72	RU/ml	< 16=neg. >22.0=pos.
<b>Borrelia burgdorferi antibodies (immunoblot)</b>				
Borrelia Blot IgG antibodies	+	<b>positive</b>		negative
		<b>Bands: OspC (+),p41 +, VlsE-Bb +</b>		
Borrelia Blot IgM antibodies		negative		negative
<b>Borrelia burgdorferi EliSpot</b>				
Borrelia burgd. full antigen	+	<b>4</b>	SI	< 2
Borrelia OSP mix (OSPA/OSPC/DbpA)	+	<b>3</b>	SI	< 2
Borrelia LFA-1		1	SI	< 2
<b>Yersinia antibodies</b>				
Yersinia IgG antibodies (EIA)	+	<b>1.9</b>	ratio	< 0.8=neg.; >1.1=pos.
Yersinia IgA antibodies (EIA)	+	<b>8.6</b>	ratio	< 0.8=neg.; >1.1=pos.

# Laboratory test results: Patient 4

		<b>Results</b>	<b>Unit</b>	<b>Reference range</b>
<b>Yersinia EliSpot</b>				
Yersinia EliSpot	+	<b>20</b>	SI	< 2
<b>Chlamydia pneumoniae antibodies</b>				
Chlam.pneum. IgG antibodies (ELISA)	+	<b>1.2</b>	ratio	< 0.8=neg.; >1.1=pos.
Chlam.pneum. IgA antibodies (ELISA)	+	<b>3.5</b>	ratio	< 0.8=neg.; >1.1=pos.
<b>Chlamydia pneumoniae EliSpot</b>				
Chlamydia pneumoniae EliSpot	+	<b>18</b>	SI	< 2
<b>Mycoplasma pneumoniae antibodies</b>				
Mycoplasma pneumoniae IgG (EIA)	+	<b>1.1</b>	ratio	< 0.8=neg.; >1.1=pos.
Mycoplasma pneumoniae IgM (EIA)		0.3	ratio	< 0.8=neg.; >1.1=pos.
Mycoplasma pneumoniae IgA (EIA)	+	<b>2.0</b>	ratio	< 0.8=neg.; >1.1=pos.
<b>Cytomegalovirus</b>				
Cytomegalovirus IgG antibodies (EIA)	+	<b>3.7</b>	ratio	< 0.8=neg.; >1.1=pos.
Cytomegalovirus IgM antibodies (EIA)		0.3	ratio	< 0.8=neg.; >1.1=pos.
<b>Cytomegalovirus EliSpot</b>				
CMV EliSpot	+	<b>4</b>	SI	<2

# Laboratory test results: Patient 4

		<b>Results</b>	<b>Unit</b>	<b>Reference range</b>
<b>Coxsackie-Virus antibodies</b>				
Coxsackie Virus IgG Type B1 (IFT)	+	<b>1:400</b>	titer	< 1:100
Coxsackie Virus IgA Type B1 (IFT)	+	<b>1:100</b>	titer	< 1:10
<b>Rickettsia antibodies</b>				
Rickettsia rickettsii IgG antibodies	+	<b>1:256</b>	titer	< 1:64
Rickettsia typhi IgG antibodies		< 1:64	titer	< 1:64
<b>Epstein-Barr-Virus antibodies</b>				
EBV-CA IgG antibodies (EIA)	+	<b>7.1</b>	ratio	< 0.8=neg; >1.1=pos
EBV-EBNA antibodies (EIA)	+	<b>4.2</b>	ratio	< 0.8=neg; >1.1=pos
EBV-CA IgM antibodies (EIA)		0.4	ratio	< 0.8=neg; >1.1=pos
<b>Epstein-Barr Virus EliSpot</b>				
EBV-EliSpot (lytic)	+	<b>17</b>	SI	< 2
EBV-EliSpot (latent)	+	<b>8</b>	SI	< 2
<b>CD 57 flow cytometry</b>				
CD 57 positive NK cells	-	<b>37</b>	/µl	100-360

## **Summary Patient 4**

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### **Coinfections checklist (symptoms):**

Multiple infections with

Borrelia burgdorferi + Chlamydia pneumoniae + Mycoplasma pneumoniae + Coxsackie virus +

Epstein Barr Virus + Rickettsia + Yersinia

### **Laboratory test results:**

Multiple infections with

Borrelia burgdorferi + Chlamydia pneumoniae + Mycoplasma pneumoniae + Coxsackie-Virus + Epstein Barr Virus + Rickettsia rickettsii + Yersinia + Cytomegalovirus

# Complementary therapy options: for example...

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## A) Lee Cowden Protocol against viruses

Takuna + Burbur-Pinella + Samento + Serrapeptase:

"For Coxsackie, EBV and CMV Dr. Cowden recommends the Cowden Support Programme (CSP) plus Takuna. For patients with high viral loads he recommends 30 drops of Takuna 4 times daily or 30 drops 2 times per day for patients with lower viral loads."

## B) Nutrined Program against bacteria and viruses

1. Multimessenger
2. Artemisinin SOD
3. ATP Fuel
4. Transfer Factor Lym Plus (against Lyme, bacteria and viruses)
5. Messenger N1 (against Mycoplasma/Chlamydia and viruses)
6. Lumbrokinase (against biofilms)

# How to obtain ArminLabs tests in the UK

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- The Academy of Nutritional Medicine is the hub for ArminLabs tests in the UK. Please visit the ArminLabs tab on their webpage [www.aonm.org](http://www.aonm.org)
- The tab is:<http://www.aonm.org/Armin%20Labs>
- Their number is 03331 210 305
- They will advise you, arrange for a blood draw if requested, arrange a courier of the bloods to Germany, etc.

# Thank you very much for your attention!



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