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**Lyme Disease Impediments to Recovery**

***?? Why is it that so many people with Lyme stay sick, even despite long-term antibiotics ??***

**1.) Slow Growth Cycle:**

Lyme bacteria are slow growing stealth infections that replicate every 28 days. Since they are

most easily killed in growth cycle, prolonged treatment of a year or more is usually needed.

**2.) Bacteria in Hiding:**

Cystic forms of Lyme, biofilms, and clots provide places for bacteria to hide and evade the immune system and antibiotics. The Lyme organism also has the ability to change it's outer surface protein coat, so when the immune system gets it's number, the bacteria changes it's number!

Solution - Eliminate Places to Hide:

 Xylitol 1 tsp or Stevia 10 drops 2x/d breaks up biofilm

 Serrapeptase or Nattokinase 1 – 5 caps 2x/d breaks up clot and biofilm

 Tinidazole 500 mg 2x/d 3 days/week kills cystic form of Lyme and breaks up biofilm

**3.) Inability to Excrete Neurotoxins:**

Neurotoxins fire off nerves in pain or dysfunction, cause brain fog and neurologic impairment, incite inflammatory response, impair endocrine (hormonal) function, poison mitochondria so they can't process energy – which underfunds the immune system, and shift the immune system out of bacterial infection-fighting mode into inflammatory mode. The immune system cannot function to get rid of infection.

Solution - Liver and Detox Support:

 Glutathione - Liposomal or IV

 Alpha Lipoic Acid 250 – 600 mg 1 – 2x/d

 NAC 600 mg 1 – 2x/d

 Green Tea 1 cup 4x/d or 1 cap 2x/d (not on Disulfiram)

**4.) DNA Defects:**

MTHFR (Folate activation) gene defects and other impairment of Methylation pathways are crucial to liver detoxification, tagging abnormal DNA, brain neurologic function:

Solution - Methylation Support:

Hydroxy or Methyl B12 1000 - 5000 mcg/d left to dissolve in the mouth

 Methyl Folate 400 - 5000 mcg/d

**5.) Overwhelmed Immune system:**

Lyme bacteria are able to avoid immune recognition by changing their outer surface proteins

Solution - Boost immune function:
 Low Dose Naltrexone; blocks the endorphin receptor, tricking the body into making more endorphins,
 which shift the immune system out of inflammatory mode into bacterial infection fighting mode.

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