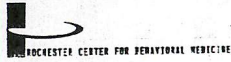


# ADHD is a Notable Characteristic of Patients Suffering from Chronic Lyme Disease: A Survey of Adults at the Michigan Lyme Disease Association Conference



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### OBJECTIVES:

To gain a greater understanding of the psychiatric implications associated with Lyme Disease

### MATERIALS AND METHODS:

Participants in the study were drawn from the Michigan Lyme Disease Association Conference on August 21 and 22, 2009. The survey was open to individuals 18-80.

Subjects were informed that the intention of the study was to gain a greater understanding of the psychiatric dimensions associated with Lyme Disease.

Survey packets included a demographic questionnaire and four behavioral rating scales:

1. Adult Self-Report Inventory-4 (ASRI-4)
2. Adult ADHD Self-Report Scale (ASRS) 18-item version
3. Fatigue Severity Scale (FSS)
4. Quick Lyme Disease Checklist

The survey was conducted in accordance with The Code of Standards and Ethics for Survey Research (CASRO). All subjects read and signed an informed consent prior to participation.

### DEMOGRAPHICS:

	Lyme Group (n=58)	Control Group (n=26)
Mean Age	49.6	48.9
% Female	81%	50%

### RESULTS OVERVIEW:

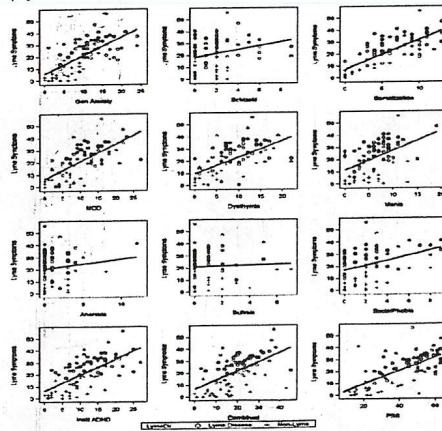
Chronic Lyme Disease (CLD) subjects endorsed more ADHD symptoms than controls. The ADHD subscale of the Adult Self-Report Inventory (ASRI) scores showed significantly higher scores on the combined and inattentive scales. The AD/HD Self-Report Scale (ASRS) was significant for both inattentive and hyperactive subunits.

Predictably, CLD subjects had statistically significantly higher scores on the Fatigue Severity Scale than their control group counterparts. The ASRI also revealed that the CLD group had dramatically higher rates of dysthymia, generalized anxiety, major depression and somatization.

This study corroborates earlier findings that identified a relationship between CLD and anxiety and depression. This survey extends these findings to include a correlation between CLD and ADHD (inattentive and combined types). Although this is the first survey to identify the linkage of these two conditions, cognitive deficits associated with CLD have been demonstrated before.

### CORRELATION OF LYME DISEASE SYMPTOMS WITH PSYCHIATRIC SYMPTOM CATEGORIES:

*Correlation of Lyme symptoms (as measured by the Quick Lyme Disease Checklist) and psychiatric symptoms (measured by the Adult-Self Report Inventory-4)*



### A CLOSER LOOK AT AD/HD AND LYME DISEASE- MEAN ADULT AD/HD SELF-REPORT SCORES:

ASRS Subscale	Lyme Group (n=58)	Control Group (n=26)	P-Value
Inattentive Type	11.6 (4.4)	7.2 (4.0)	<0.0001
Hyperactive/impulsive Type	21.6 (8.1)	14.1 (7.6)	<0.0001
Combined Type	33.0 (11.3)	21.7 (11.1)	0.0001

### CONCLUSIONS:

There appears to be a complicated relationship between chronic Lyme Disease and AD/HD. The following conclusions can be drawn from our data:

1. Chronic Fatigue Syndrome is associated with several psychiatric conditions, including AD/HD, generalized anxiety and dysthymia.
2. Fatigue and persistent, unexplainable pain is evident in long-standing AD/HD.<sup>1</sup> We speculate that individuals with AD/HD suffer from these symptoms and are likely to be diagnosed with a number of nebulous medical conditions, including chronic Lyme Disease.
3. Exploring the natural history of AD/HD may shed light on the etiology of somatic conditions, including Chronic Fatigue Syndrome and Fibromyalgia.

### REFERENCES and CONTACT INFORMATION:

1. Young, JL, Redmond, JC (2007). Fibromyalgia, chronic fatigue, and adult attention deficit hyperactivity disorder in the adult: a case study. *Psychopharmacology Bulletin*, 40(1), 118-126.

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