

## **Stress and Idiopathic EN**

**An Original Research Study Proposal by Rebecca Strecker**

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### **Problem and Hypothesis:**

**Erythema Nodosum [EN] is the most common form of panniculitis. It presents with painful, red, hot lumps on the legs and often is accompanied by fever, malaise, and joint pains. Approximately 100 EN triggers have been identified.**

**Stress has been implicated in various autoimmune and other disorders, but is not considered an etiological factor for EN.**

**Cortisol is a stress hormone measured by blood test. The opportunity exists to investigate if stress induced elevated cortisol levels are a triggering factor for idiopathic EN.**

**Further study may show that so called idiopathic EN is triggered by elevated stress levels in persons with impaired stress regulators.**

**Since approximately half of EN patients are chronic and idiopathic, this research will add greatly to the understanding of the etiology of this mysterious and frustrating illness. It may also save money on lab tests, and identify those who are most likely to benefit from stress reduction and lifestyle changes.**

### **Proposal:**

**The problem, as stated, is that stress continues to be an unresearched trigger for idiopathic erythema nodosum. Members of the Yahoo online erythema nodosum group, founded in 2003, have often given anecdotal evidence of stress induced EN and expressed their belief that stress is an exacerbating factor of their EN symptoms.**

**Since no research has been done to show if any relationship exists between EN and Stress among idiopathic types, doctors do not address the issue and in fact ignore it entirely choosing drug treatments as prednisone or SSKI.**

**Hardly a week goes by where original research is not published pointing to the very real correlation between Stress and various illnesses.**

**While many research studies concerning stress use laboratory animals that have been bred to mimic human disease states, we know of no such animal that exhibits EN nodules along with the typical EN syndrome manifestations.**

**Therefore, the method of our proposed research would include idiopathic EN patients. With a membership of over 1500 worldwide, and approximately half of us chronic EN idiopathic, finding suitable subjects will not be much of a challenge.**

**We know that stress may be quantified by blood tests measuring cortisol levels. It is well established that cortisol levels rise when stress levels are high. There are two major categories of problems that cause high cortisol levels:**

**The first is when the body produces too much cortisol. This can occur from sleep deprivation, cigarette smoking or alcohol consumption.**

**The second is from using medications that contain steroids, like cortisone, prednisone or hydrocortisone to control inflammation caused by other diseases, such as rheumatoid arthritis, asthma and some allergies,**

**We propose careful and thorough screening of all subjects. All subjects must have biopsy proven EN, be deemed chronic and idiopathic by medical tests to rule out underlying pathology, and undergo a medical history to specifically enquire about the nearly 100 known EN triggers. Since both smoking and alcoholic drinking are known to elevate blood levels of cortisol, subjects will be queried of these activities and may be disqualified based on them.**

**Subjects will be given instructions to keep a detailed diary where daily stressful events are given subjective numerical values. These numerical values will be on a 10-point scale to further refine the subject responses.**

**EN flare-ups will be annotated including number and severity of lumps, and other EN syndrome symptoms.**

**Blood tests to evaluate cortisol levels will be done on a weekly basis.**

**Data from the research subjects and the blood test results will be collected on a regular and frequent basis. Subjects will have a researcher to report contact changes or for clarification of diary entries.**

**At one-year intervals, the researchers will match the diary entries with cortisol levels comparing "baseline" [remission] to days and weeks preceding flare-ups. Data will be collected for up to 5 years, when the findings will be statistically analysed, written up and presented to the medical community.**

**The conclusions will discover if stress, [as measured by elevated cortisol levels] should be added to the list of EN etiological factors. It will also shed light on whether chronic idiopathic EN patients may both lessen the frequency and severity of symptoms by learning to control stress.**

**Future studies may find that chronic idiopathic EN patients have a defective stress regulator, the improvement of which may effectively treat their chronic form of EN.**