

# Hepatitis B Fact Sheet

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a series of fact sheets written by experts in the field of liver disease

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## The Liver:

# Stress and the Liver

It is an established fact that stress can have a negative impact on both mind and body. People with hepatitis B often comment that a period of stress usually leads to a 'flare-up' of symptoms, especially fatigue. Surprisingly, there is a wealth of information about how stress can affect liver disease. This fact sheet will cover some of the data from a review article titled "Does Stress Exacerbate Liver Disease?" by Y. Chida and colleagues, and sheds some light on the effects of stress on liver disease as well as raising some interesting questions.<sup>1</sup>

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**In people with chronic hepatitis B, a significant positive correlation between the degree of depression and alanine aminotransferase or ALT levels was established (Fukudo et al.)**

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In the review article, previously known or hypothetical reasons for the effect of stress on liver disease were discussed, including:

- 'Fear' and 'anxiety' induced by hypnotic suggestion significantly decreased hepatic (liver) blood flow (Hirose et al.)
- In people with chronic hepatitis C, type I personality scales (Grossarth-Maticek) have been associated with severity of liver disease even after adjusting for age, sex, education level, smoking, drinking, and duration of illness (Nagano et al.)
- Patients who had personality traits of 'submissive,' 'relatively controlled,' and 'of indifferent mood' before liver transplantation were more likely to have acute transplant rejection (Hildebrandt et al.)

- Research on healthy animal (rodent) models found that restraint and electric foot-shock stress triggered slightly elevated ALT levels (Fernandez et al, Chida et al.)

The authors went on to describe the possible links between stress and liver disease that might influence liver injury:

- The release of glucocorticoids (cortisol in humans, corticosterone in rodents) controls the homeostasis (steady or healthy state) of each organ. In corticosterone pre-treated mice, it was found that "a remarkable exacerbation of liver injury" occurred.
- During stress, natural killer cells (NKT) are expanded in the liver and, in some of these cases, contributed to liver cell death and worsening of liver disease.

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**Stress and the Liver**

- In the part of the brain that controls the liver, stress was found to impair blood flow and may lead to or trigger liver damage.
- Stress can exert a dual effect (enhancement or reduction) of the inflammatory process that takes place in the liver.
- A certain nerve (vagus) from the brain to the liver when stimulated with anti-stress therapy (hypnosis, meditation, acupuncture) may actually improve or reduce the negative effect of stress on the liver.

The authors concluded that even though all of the interactions between stress and the liver are not completely understood there appears to be a negative association between stress and liver disease progression.

The authors noted that the link between liver disease and stress needs to be identified so that “physicians and other healthcare practitioners would be better able to treat liver disease by helping their patients learn coping and relaxation skills.”

Interestingly, the emotion that is attached to the liver in Traditional

Chinese Medicine is anger. Stress, depression and anger can go hand in hand. There are many strategies that can help when dealing with stress including:

- meditation
- yoga
- prayer
- deep breathing
- exercise
- acupuncture
- joining a support group
- joining an on-line support network or listserv
- enlisting the help of family, friends and other loved ones
- seeking help from co-workers, if appropriate

One of the best strategies for reducing the stress of having chronic hepatitis B is to learn as much about it as much as possible and work closely with a medical provider to make sure that the person living with chronic hepatitis B receives the best possible medical care.

The bottom line is that learning to control stress should be a high priority for anyone living with hepatitis B. This is another important piece of information for people living with hepatitis B to know in order to help keep the mind, body and liver healthy.

# References

- <sup>1</sup>“Does Stress Exacerbate Liver Disease?,” Yoichi Chida, Nobuyuki Sudo and Chi-haru Kubo. *Journal of Gastroenterology and Hepatology* 20 (2006) 202-208

# Resources

- The American Institute of Stress  
[www.stress.org](http://www.stress.org)
- Hepatitis B Information and Support List  
<http://www.hblist.org>
- HepC Meditations  
<http://www.hepcmeditations.org>
- Mayo Clinic  
[www.mayoclinic.com/health/stress-management/MY00435](http://www.mayoclinic.com/health/stress-management/MY00435)
- Medline  
[www.nlm.nih.gov/medlineplus/stress.html](http://www.nlm.nih.gov/medlineplus/stress.html)
- Stressbusting  
[www.stressbusting.co.uk](http://www.stressbusting.co.uk)
- World Wide Online Meditation Center  
[www.meditationcenter.com](http://www.meditationcenter.com)
- Zen  
[www.do-not-zzz.com](http://www.do-not-zzz.com)

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The information in this fact sheet is designed to help you understand and manage HBV and is not intended as medical advice. All persons with HBV should consult a medical practitioner for diagnosis and treatment of HBV.

For more information about hepatitis B, visit the following websites.  
**Hepatitis B Foundation: [www.hepb.org](http://www.hepb.org) • [HIVandHepatitis.com](http://HIVandHepatitis.com)**

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