

## Up Modulation of the Host Immune Response for Anti-Viral Treatment with DHEA.

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The results show that the steroid hormone dehydroepiandrosterone (DHEA) may have a significant role as an up modulator of the immune response, in contrast to the down regulation (immunosuppression) of other steroid hormones. The up regulation of the immune response was particularly evident when animals were infected with either an RNA or DNA virus. A subcutaneous injection of DHEA into male mice resulted in a significant protection from mortality induced by a human coxsackievirus B4. In virus infected animals only, administration of DHEA was associated with an 80% elevation of IgM and IgG antibody forming cells. Similarly, there was an 150% elevation in monocyte counts, again only in coxsackievirus infected and DHEA treated animals. Subsequent experiments with a DNA virus, herpes type II, demonstrated that DHEA administration was also effective in reducing mortality when this virus was injected intracranially. Initial results show that DHEA did not affect virus titers in vitro, and consequently its anti-viral effect appears to be an indirect effect. Our observations demonstrate that up modulation of the host immunity by DHEA is an effective approach for the treatment of viral infections. This approach has also some major advantages since it can be used with or without conventional antiviral chemotherapeutic treatments.

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