



## Preventing and Treating Long-Haul COVID-19 and Other Types of Inflammation

All active ingredients being included are considered GRAS in the US. **Generally recognized as safe (GRAS)** is a United States Food and Drug Administration (FDA) designation that a chemical or substance added to food is considered safe by experts.

### Dehydroepiandrosterone (DHEA)

Dehydroepiandrosterone decreases mortality rate and improves cellular immune function during polymicrobial sepsis:

Conclusions: These results demonstrate that DHEA administration leads to an increased survival following a septic challenge. The immune enhancing effect of DHEA is accompanied by a reduction of TNF- $\alpha$  release and an improved activity of T-cellular immunity. DHEA administration may, therefore, be beneficial in systemic inflammation.

[https://www.researchgate.net/profile/Hans-Pape/publication/279149490\\_Dehydroepiandrosterone\\_improves\\_survival\\_rate\\_and\\_immune\\_function\\_after\\_polymicrobial\\_sepsis/links/58c7eb6aaca27232ac9d1cc7/Dehydroepiandrosterone-improves-survival-rate-and-immune-function-after-polymicrobial-sepsis.pdf](https://www.researchgate.net/profile/Hans-Pape/publication/279149490_Dehydroepiandrosterone_improves_survival_rate_and_immune_function_after_polymicrobial_sepsis/links/58c7eb6aaca27232ac9d1cc7/Dehydroepiandrosterone-improves-survival-rate-and-immune-function-after-polymicrobial-sepsis.pdf)

Dehydroepiandrosterone (DHEA) restrains intestinal inflammation by rendering leukocytes hyporesponsive and balancing colitogenic inflammatory responses:

Dehydroepiandrosterone (DHEA) is a hormone that plays an important role in the modulation of inflammatory responses.

Here we showed that low dose DHEA inhibited proliferation of spleen cells and IFN- $\gamma$  production. The treatment of C57BL/6 mice with DHEA during colitis induction by dextran sodium sulfate (DSS) led to a reduction in weight loss and clinical signs of disease. There were decreased peripheral blood monocytes on day 6 of DSS exposure and treatment, besides increase in circulating neutrophils in the tissue repair phase. DHEA also led to reduced lamina propria cellularity and restoration of normal colon length. These results were accompanied by decreased expression of IL-6 and TGF- $\beta$  mRNA, while IL-13 was augmented in the colon on day 6, which was probably related to attenuation of inflammation. There was retention of CD4<sup>+</sup> cells in the spleen after use of DHEA, along with augmented frequency of



CD4+IL-4+ cells, decreased CD4+IFN- $\gamma$ + in spleen and constrained CD4+IL-17+ population in the mesenteric lymph nodes. Moreover, splenocytes of mice treated with DHEA became hyporesponsive, as observed by reduced proliferation after re-stimulation ex-vivo. In conclusion, DHEA modifies leukocyte activity and balances the exacerbated immune responses which drive local and systemic damages in IBD.

<https://www.sciencedirect.com/science/article/abs/pii/S0171298516300845>

## Replacement therapy with DHEA plus corticosteroids in patients with chronic inflammatory diseases--substitutes of adrenal and sex hormones:

These studies clearly indicate that chronic inflammation alters, particularly, the adrenal response. However, at this point, the reason for the specific alteration of adrenal function in relation to pituitary function remains to be determined. Since one of the down-regulated adrenal hormones, DHEA, is an inhibitor of cytokines due to an inhibition of nuclear factor-kappa B (NF-kappa B) activation, low levels of this hormone may be deleterious in chronic inflammatory diseases. We have recently demonstrated that DHEA is a potent inhibitor of IL-6, which confirmed an earlier study in mice. Since IL-6 is an important factor for B lymphocyte differentiation, the missing down-regulation of this cytokine, and others such as TNF, may be a significant risk factor in rheumatic diseases.

<https://pubmed.ncbi.nlm.nih.gov/11155790/>

For further details and the list of all ingredients please click on the link or visit our website [www.rheumcare.com/research-ingredient-nutraceutical](http://www.rheumcare.com/research-ingredient-nutraceutical)

2801 NE 213th Street, Suite 801  
Aventura, FL 33180  
[www.covid19longhaulerclinic.com](http://www.covid19longhaulerclinic.com)



@covid19longhaulerclinic