

YOGA RESEARCH

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Yoga & Plasma Cortisol Reduction - A Study

Modern literature on Yoga provides evidence that even simple classical Yoga practices such as postures, breathing exercises and meditation can promote flexibility, balance, relaxation, emotional stability and stress reduction.

The specific aim of the following study was to test if a single set of Yoga practices can lower plasma cortisol (a hormone known to increase due to stress) in either inexperienced or experienced practitioners of Yoga.

Healthy male and female volunteers (n=21, mean age 37.24 +/- 1.45 years) were divided into three equally sized, age-matched groups:

- 1) Control subjects with no experience in Yoga practice.
- 2) Experimental subjects inexperienced in Yoga practice.
- 3) Experimental subjects with 2 to 20 years of Yoga experience and who practice Yoga three or more hours weekly.

All subjects were requested to maintain their regular sleep pattern prior to the study.

On the day of the study, volunteers were tested from 10:30 AM until 12:30 PM.

The control group sat upright in chairs, filled out study consent forms and questionnaires, and then read or wrote quietly throughout the remaining time.

The two experimental groups also filled out consent forms and questionnaires and then were guided through a 50 minute set of Yoga practices by an experienced Yoga instructor.

Blood samples (14 ml) were collected by antecubital venipuncture from all volunteers immediately before and after the Yoga and control sessions. Thus the two blood samples were collected at approximately 11:00 AM and at 12:00 noon.

Whole blood samples were centrifuged at 3000 rpm and the plasma fractions were aliquoted into cryogenic vials for storage at -20 degrees centigrade until thawed for

While there is extensive literature on stress stimuli that raise cortisol levels, there is a paucity of information on behavioral methods that lower cortisol.

radioimmunoassay (RIA). Plasma cortisol levels were quantified using an antibody-coated tube RIA system (ImmunChem, ICN Biomedicals, Inc.).

Analysis of variance showed there were no significant differences between plasma cortisol levels of the three groups for the first time point (F=0.46; p=0.64).

A decrease in plasma cortisol levels from 11:00 AM to 12:00 noon was observed in 19 of the 21 volunteers, which is consistent with the normal circadian changes in cortisol.

Paired t-tests showed that these decreases were statistically significant in the groups practicing Yoga (inexperienced: t= -3.12, p<0.03 and experienced: t= -4.46, p<0.01) but were not significant in the control group (t= -1.55, p=0.17).

These preliminary data suggest that Yoga practices may have a specific influence on cortisol regulation in healthy humans.

While there is an extensive literature on stress stimuli that raise cortisol levels, there is a paucity of information on behavioral methods that lower cortisol. It would be useful to repeat and extend this experiment to determine if Yoga can reliably reduce the physiological consequences of stress.

PLASMA CORTISOL REDUCTION IN HEALTHY VOLUNTEERS FOLLOWING A SINGLE SESSION OF YOGA PRACTICES.
G. Brainard, V. Pratap, C. Reed, B. Levitt and J. Hanifin. Neurology, Jefferson Med. Col., Philadelphia, PA 19107; Yoga Research Soc., Philadelphia, PA 19147.

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Some of the Yoga Practices in the Plasma Cortisol Reduction Study



Śavāsana
(Corpse Pose)



Bhujangāsana
(Cobra Pose)



Śalabhāsana
(Locust Pose)



Dhanurāsana
(Bow Pose)



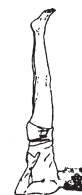
Pāścimatānāsana
(Posterior Stretch Pose)



Vākṛāsana
(Twist Pose)



Halāsana
(Plow Pose)



Sarvāṅgāsana
(Shoulder Stand)



Matsyāsana
(Fish Pose)



Cakrāsana
(Side-Bending Pose)



Vṛkṣāsana
(Tree Pose)



Sukhāsana
(Easy Pose)

OBSERVING THE BREATH



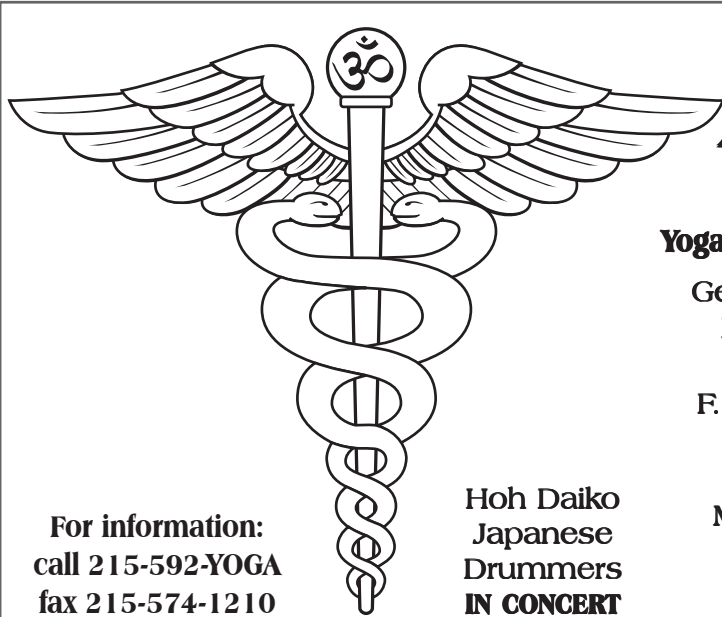
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Science gives man knowledge,
which is power.
Religion gives man wisdom,
which is control.

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"The event was really special, and I had a wonderful sense of fulfillment following. Your colleague and friend,"

Larry Dossey, M.D.

"Carole and I had a most enjoyable time. It was such a blessing to meet everyone. I appreciate the many hours of preparation that went into making the workshop run so smoothly."

Brian L. Weiss, M.D.

"How happy I am to be spending next weekend with Dr. Pratap and all our loved ones."

Anni Speier

"I have attended all but two of the previous Conferences and at the close of each have always said a 'Thank You' to God for guiding me in a path that has led to so many wise teachers."

Ronnie Brenner

"I enjoyed the Conference very much. I felt very welcomed by the people in your association."

Sue Zanotti

"I was very happy with you all, I often remember the friendly atmosphere of true yogic people."

Dr. Ctibor Dostalek

"I had such a lovely time at the Conference - so much love and fun. Yahoo! In peace,"

Patch Adams, M.D.

"Although I attended only two presentations, they were excellent."

Dr. Phil Friedman

"We had a wonderful weekend, saw lots of old friends and gained much insight from the interesting speakers."

David Michael

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