

Yoga: An endocrine therapy

Sir,

The editorial by Jyotsna *et al.*, highlighting the various benefits of yoga in people with diabetes, is informative reading. Yoga is Indian system of healthy living, which is now adopted by western scientists also. As mention by Unnikrishnan *et al.*^[1] yoga, if encouraged in schools and colleges, may well turn out to be a low cost-effective strategy for prevention and treatment of diabetes.

Importance of exercise in diabetes prevention and treatment cannot be over emphasized. Physical activity has been shown to reduce development of type 2 diabetes^[1] and also reduce cardiovascular mortality in patients who already have diabetes.^[2] However, exercise adherence is very poor in patients with

diabetes^[3] even in developed countries. The various factors for nonadherence are associated musculoskeletal problems such as arthritis, lack of motivation, lack of re-enforcement and monitoring by treating physicians and busy schedule of working class of people. In one study, 37.7% patients with diabetes did not spend any time on exercise.^[4]

Stress is another important factor of modern life which has an impact on health. With progressively decreasing sleep hours, psychological stress and depression diabetes and metabolic syndrome have become common in Asian population.^[5] Today's India has been termed hyperadrenergic and hyperdopaminergic.^[6] Hence, the stress should be a focus of attention while treating diabetes.

Yoga is an alternative therapy for diabetes with not only physical but also psychological benefits. It improves blood glucose, lipid profiles and oxidative stress.^[7] Yoga's energy expenditure is similar to moderate exercise.^[8] Advantages

of yoga are its easy availability, acceptance by elderly people over physical activity. Yoga not only helps to reduce the weight but also helps to reduce blood glucose levels. Studies have also confirmed that practicing certain asanas such as Ardha Matsyendrasana (half-twist pose) combined with Dhanurasana (bow pose), Vakrasana (twisted pose), Matsyendrasana (half-spinal twist), Halasana (plough pose) squeezes and compresses the abdomen and helps stimulate the pancreatic secretions or hormonal secretions.

A recent Indian study has demonstrated significant improvement in the quality of life and a nonsignificant trend toward improvement in glycemic control of diabetic patients practicing the comprehensive yogic breathing program.^[9] Yet another study from India showed that cardiac autonomic functions improved in patients with diabetes who followed the comprehensive yogic breathing program.^[10] Another study showed that 8-week yoga intervention was feasible and resulted in greater weight loss, reduction in waist circumference and psychological well-being when compared to a walking control.^[11] Thus, evidence for benefit of yoga is becoming more robust. With international Yoga day recently being declared to be celebrated on 21st June, yoga may soon become an accepted non-pharmacological endocrine therapy along with diet and exercise.

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