Stretch for Health

Introduction

Yoga asana practices involve stretching and maintaining a final posture. Maintaining final posture consists of isometric contraction of muscles wherein the muscles work as they carry weight of the body. Thus, stretching and isometrics are inherent in these practices. Irrespective of steadiness or wandering mind of a practitioner, the above components come to play on the neuromuscular system. We know the benefits of the above functions in reasonable details; stretching improves muscle control and isometrics could strengthen the muscles involved.

As muscles are stretched, the related tendons are also stretched. Both the muscles and tendons have multiple feedback loops sending information to central nervous system (CNS) (brain and the spinal cord) regarding amount of stretch. Since stretching could harm both muscles and tendons involved (especially the latter), this information is vital and is a protective mechanism. CNS responds to the rate of stretch and how long the stretch is maintained. These are effectively used by physiotherapists to provide or re-establish proper control of muscle activity.[1]

Stretching a Blood Vessel

An aspect overlooked in the above discussion is the fact that as muscles are stretched, the blood vessels imbedded in the muscles are also stretched. A question arises if this stretch of blood vessels is good or detrimental to the vessels. This is a vital question since blood flow should not be compromised after a stretch. An early research on correlating yoga practices to arterial stiffness showed a reduction in stiffness which could help in reducing morbidity due cardiovascular incidences. The authors state that “our findings suggest that yoga program offered was more effective than brisk-walk in reducing arterial stiffness along with BP in elderly individuals with increased PP.”[2]

Further, a recent report from the University of Milan in Italy showed that “a 12-week stretching regimen improved blood flow, lowered blood pressure, and decreased the stiffness of arteries.”[3] Arterial stiffness is associated with high blood pressure, leading to stroke and heart ailments. Good blood flow could reduce damage to arterial walls and bring in required nutrients for cellular repair. The above studies have important implications to asana practice and should be carefully assessed through replication studies.

Caution is recommended while practicing stretch; start with less intensity, hold the stretch for at least 20–30 s; repeat a few times. Do not hold the breath; the movements must be smooth and even. Stretch both before and after other exercises. Cardiac patients should consult a physician before any change in exercise regimen.

Many questions need to be answered before this technique becomes a clinical tool for cardiovascular problems. What is the effect of stretch on lymphatics since they run close to blood vessels? What is the mechanism through which stretch produces the effects observed? Can this help patients who already exhibit blood vessel stiffness leading to hypertension and other related problems? It is the hope that all these and related problems are looked into so that a consistent and evidence-based picture emerges.

Conclusion

Research in Yoga practices is taking one into exciting areas of human biology, starting from brain function to neuromuscular rehabilitation and good organ function. Practicing asanas seems to provide a host of benefits to muscular function through activation of feedback loops sending information to brain for proper coordinated control of the muscles. Pranayama practice provides improved gas exchange in the body supplying adequate oxygen to cells of the body. Further, meditation brings many benefits to the individual in terms of positive attitude and acceptance without conflicts of oneself and others with whom one interacts. With the slew of advantages, Yoga practices are a boon to overcome psychosomatic illness as well as psychiatric problems.[4]

TM Srinivasan
Division of Yoga and Physical Sciences, Yoga and Physical Sciences,
Bengaluru, Karnataka, India.
E-mail: editor@ijoy.org.in

References

1. Page P. Current concepts in muscle stretching for exercise and
2. Patil SG, Aithala MR, Das KK. Effect of yoga on arterial stiffness in elderly subjects with increased pulse pressure: A randomized controlled study. Complement Ther Med 2015;23:562-9.
3. Cleveland Heart Lab; September 08, 2020. Available from: https://www.clevelandheartlab.com. [Last accessed on 2022 Feb 02].
4. Varambally S, George S, Srinivasan TM. The Science and Art of Yoga in Mental and Neurological Healthcare. New Delhi: Jaypee Brothers Medical Publishers; 2021.