Flexibility and Muscular Fitness

Flexibility provides range of motion for limbs. Having excessive body fat can restrict joint movement and limited flexibility can cause of injury. From the Fitness & Health Test book, stretching exercises are recommended after a warm-up when joints and muscles are warm, and stretching before competition may lessen performance and it is not recommended (Sharkey & Gaskill, 2013. p.172). Benefits of stretching include relief of muscle sores and reduced muscle and tendon injuries for higher intensity exercises.

I found a research article about muscle stretching, exercise and rehabilitation. In this article, static, dynamic, pre-contraction, and post-isometric relaxation (PIR) stretches were introduced.  **Static stretching** is conducted by holding a stretch of a specific targeted muscle group. **Dynamic stretching** has two types of stretches:  active and ballistic stretching. Active stretching moves a limb in a full range of motion to warm up the muscles. Ballistic stretching has a rapid and repeated bouncing movement.  **Pre-contraction stretching** is where muscles are stretched, contracted, and then stretched farther.  **Post -isometric relaxation-stretches** are done by starting passively stretched, then contracting isometrically against resistance while in the stretched position. After that, muscles are passively stretched again with increased range of motion.

  Research results indicated that static stretching is beneficial prior to competition and dynamic stretches are good for warm-ups.  Static stretching is recommended to be included in routine exercises for adults older than 65 years old. Both static and pre-contraction stretches are beneficial to orthopedic patients, but they are not good for patients with joint contraction issues. Overall, stretching increases range of motion. The post-facilitation stretch is effective for contracting muscles (Page, 2012).

A 3-day stretching study conducted by 38 students showed significant increases in their flexibility. On the first day, they warmed up for 5 minutes by jogging 400 meters, then performed range-of-motion movements for the lower limbs for 2-3 minutes. After this, they took the sit-and-reach flexibility test and measured their standing-long-jump. After that, they took the sprint and 1RM tests to gauge knee flexion and extension ability. On the second day, the participants’ stretching ability was measured. Each person warmed up for 5 minutes by jogging 400 meters followed by slight stretching in the lower limbs for 2-3 minutes. They then stood flat-footed and reached up to displace a marker on the Vertec. On the third day, participants did 15 assisted stretching exercises, 4 knee passive activities, and active exercises. Finally, they did two active and passive half-lotus position exercises, quadricep stretches, and calf stretches. The study showed that sit and reach flexibility increased by 18.1% on average. According to this study, this means that doing moderate exercises, jumping, sprints, and various stretching exercises improved the flexibility of the students (Kokkonen, et al. 2007).

References

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