



beyond expectations

Dynamic Flexibility

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Objectives

- Identify the pros/cons of the different modes of stretching
- Introduce the fundamental movement patterns used in dynamic stretching
- Explore program design variables for different populations

Types of Stretching

- **Static** – hold muscle just beyond normal ROM for 15-30 seconds
- **PNF** – involves a shortening contraction of the opposing muscle to place target muscle on stretch followed by isometric contraction of target muscle (ie contract relax, hold relax, etc)
- **Ballistic** – **uncontrolled** bouncing motion that stretches muscle **beyond** normal ROM
- **Dynamic** – **controlled** movements that mimics the activity by slowing bringing muscles close to their functional ROM limit **without exceeding** it

Reviewing the Literature

- “It was concluded that passive **static** stretching in a warm-up **decreases sprint performance**, despite being combined with dynamic stretches, when compared to a solely dynamic stretch approach (Fletcher & Anness, 2007)”
- “Study findings indicate that **static** stretching **decreases performance in short endurance bouts** ... Coaches and athletes may be at risk for decreased performance after a static stretching bout. Therefore, static stretching should be avoided before a short endurance bout (Lowery, et al, 2014).”
- “Recent prospective studies have contended that reductions in plantarflexor strength and increases in ankle dorsiflexion range of motion from **stretching the Achilles tendon may increase the risk of injury** (Park & Chou, 2006).”

Reviewing the Literature

- “It is concluded that passive stretching did not have any significant influence on increased plasma- CK, muscle pain, muscle strength and the PCr/Pi ratio, indicating that **passive stretching after eccentric exercise cannot prevent secondary pathological alterations** (Lund, et al, 2007).”
- “The **static** stretching of the lower limbs and hip muscles had a **negative effect on explosive performances up to 24 hours poststretching** ... Conversely, the dynamic stretching of the same muscle groups are highly recommended 24 hours before performing sprint and long-jump performances. In conclusion, the **positive effects of DS on explosive performances seem to persist for 24 hours** (Haddad, et al, 2014).”
- “**Ballistic** stretching method **increased VJ height**, therefore seems to be more suitable than PNF + SS and PNF + BS before events that rely on explosive power as a part of warm-up period (Kirmizigil, 2014).”

Reviewing the Literature

- “There is moderate to strong evidence that routine application of **static stretching does not reduce overall injury rates** (Small, et al, 2008).”
- “**Dynamic** stretching has been shown to either have no effect or **may augment subsequent performance**, especially if the duration of the dynamic stretching is prolonged (Behm & Chaouchi, 2010).”

Non-scientific but common sense....

- Specificity of Training
- If we are going to **train/compete in dynamic activity**, why **stretch our muscles statically** before activity?

Fundamental Movement Patterns

“Basic 6”

1. High knees
2. Butt-kicks
3. Forward lunge
4. Backwards lunge
5. Lateral lunge
6. Karaoke/carioca

Progression

- Standing → walking → skipping → jogging
- All planes of motion
- Arm activation
- 10 steps to 10 yards

Incorporate Arm Motions

- Field Goal
- Airplane
- Wings
- Scarecrow

Exercise Prescription

	Beginners	Intermediate	Advanced
Exercises	6-10	6-20	15-45
Duration	5-10 minutes	12-25 minutes	25-50 minutes
Distance	10 steps	10-20 yards	10-100 yards
Frequency	2-4 days/week	3-5 days/week	5-7 days/week



Questions or Comments?

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