

DANCE RESOURCES BY GEORGINA BUTLER

# Ballet: Learn about...

## *STRETCHING*



## Stretching

### What Is Stretching? Understanding Flexibility Training:

Stretching maintains and/or increases the flexibility of the muscles and improves joint mobility.

**Flexibility** refers to an individual's ability to move parts of their body safely and with control through a full range of motion. Picture a dancer unfolding their leg into a développé that sees their knee placed level with their ear, or balancing in an arabesque penché that is a vertical split from the floor to the ceiling...

More scientifically, flexibility is the ability of soft tissue structures (muscles, tendons and connective tissue) to elongate smoothly and easily through the available **range of motion** (the degree of movement that occurs at a given joint).

Each joint has a unique anatomical structure which has a bearing on its range of motion.

The anatomical structure of each joint provides stability and structure to the body, allowing for everyday movement. A variety of anatomical, biomechanical and physiological factors (including the shape of the bones involved, the connective tissues which stabilise and restrict joint movement to a safe range, muscle mass and neurological tissues) determine the range of motion at each joint.

Hence, **even with endless stretching, there will be a limit as to how much movement is available.** Furthermore, joint structures can vary between individuals so **the degree of achievable flexibility will be unique to every dancer.**

As flexibility refers to an individual's capacity to move parts of their body safely and with control through a full range of motion, experts agree that **the healthiest approach to improving flexibility is to increase range of motion around a joint, without compromising stability at the joint.**

It is important to recognise that while **range of motion can be improved (as far as the joint structure will allow) and then maintained through stretching** there are potential dangers if carrying out a stretch incorrectly. By stretching through pain or without considering proper stretching technique, an individual may risk: torn muscles, unstable joints or damage to nerves.

**Knowing how to stretch safely is a must for any dancer.**

## STRETCHING METHODS:

### STATIC STRETCH

**This approach to stretching is the safest and is the best choice when recovering from injury.**

Static stretching involves elongating the muscle to its tolerance.

The stretching force is often created by gravity acting on the body but it may also be generated by another external force such as a wall, the floor, the barre or a partner.

**As with any form of stretching, the muscles should be warm before starting the stretch.**

- Choose the target muscles and position for stretching.
- Gently move to the point of feeling the stretch (not pain) and allow gravity to gently pull the targeted muscles longer.
- Breathe slowly and evenly (emphasising the exhale) and hold the stretch for 30 seconds.
- Release and return to the starting position.
- Each stretch should be repeated three to four times.

Static stretching may be used in a warm up to relieve stiffness in muscles overused in a previous exercise session but, during a warm up, the stretch should be held for no longer than 10 seconds.

It is important to remember that relaxing into a stretch involves continual motion, no matter how small. Do not simply 'sit' in a stretch.

Static stretching may be better suited to maintenance of flexibility rather than increasing flexibility as the recommended 30 second hold time is probably not enough to produce permanent connective tissue lengthening for flexibility gains. (**PNF stretching is better suited to improving flexibility.**)

However, **if static stretching is used consistently there will be scope for long-term gains in flexibility.**

Certainly, flexibility gains made through the **dynamic stretching** used when dancing can be maintained and improved upon through **regular** static stretching.

## PNF STRETCH

This type of stretch is used to improve flexibility and should only be carried out when fully warmed up.

PNF stands for '**proprioceptive neuromuscular facilitation**' which means that the small sensors that identify muscle tension (proprioceptors) are stimulated to achieve maximum elongation of the muscle without initiating the stretch reflex.

**"Hold Relax" PNF Technique** – the muscle group you want to stretch is contracted against an immovable resistance (this is known as an isometric contraction) for 10 seconds and then the muscle is relaxed and allowed to lengthen as you move deeper into the stretch.

- Choose the target muscles and position for stretching.
- Gently move to the point of feeling the stretch (not pain).
- Apply resistance to the chosen muscle for 10 seconds.
- Slowly relax and gently increase the stretch to the point of 'feeling' it again and hold for 30 seconds.

e.g. For the hamstring:

- Lie on your back with your right leg bent and your left leg straight up in the air.
- To apply resistance, place your hands on the back of your lower left leg to prevent it from moving and contract the hamstrings to try to pull your left leg away from your face.
- After 10 seconds of pulling with your hamstrings, and holding with your hands, relax your hamstrings and use your hands to gently pull the same leg towards your face for 30 seconds. Think of easing into the stretch and allowing your muscles to get longer.

**"Slow Reversal Hold Relax" PNF Technique** – uses a contraction of muscle on one side of a joint to encourage relaxation of the muscles on the opposite side.

- To stretch the hamstrings using this technique, start by contracting the hamstrings for 10 seconds, as in "Hold Relax".
- Then, relax the hamstrings as you contract the muscles on the opposite side of the joint (the quadriceps and hip flexors) to deepen the stretch.
- So, you pull your leg towards your face by using the muscles at the front of your hip and thigh.
- You can add a gentle pull in the same direction with your hands, but only pull enough to assist the stretch, not to force it.
- Remember to keep your body in perfect alignment throughout the stretch, both to intensify the stretch and teach your body to use neutral alignment when working at extreme ranges of motion.

## DYNAMIC STRETCH

**Dynamic stretching plays an important role in an effective warm up.**

Dynamic stretching refers to **moving a muscle or joint through its full range of motion in a slow, controlled manner as part of a continuous movement.**

Therefore, the dynamic stretches that you opt to use ought to be simpler versions of the movement that will be incorporated into the dance activity that follows the warm up.

- e.g. For hamstrings, inner thigh muscles and hip flexors use a controlled grand battement (a high straight leg kick), carefully extending the leg to the front, side and back.
- e.g. For calves, inner thigh muscles and hip flexors use knee bends and lunges.

**Dynamic stretching should be performed towards the end of a warm up**, once the core body temperature has been sufficiently elevated (as indicated by a light sweat).

Dynamic stretching should start slowly and then the speed and power of the movements used is gradually increased.

**Advantages** of dynamic stretching include:

- promotes dynamic flexibility
- involves multiple joints
- replicates movement patterns that are necessary as part of dancing
- provides neuromuscular training to improve coordination
- strengthens the contracting muscle
- keeps the core body temperature elevated so muscles and surrounding tissues remain pliable

Dynamic stretching is not as effective as static stretching for producing long-term gains in flexibility but it serves a purpose in preparing the body for activity.

## BALLISTIC STRETCH

This type of stretching involves vigorous bouncing which is potentially harmful and should be approached with caution.

Ballistic stretching consists of repetitive bouncing, or using the swinging momentum of the trunk or limb, to provide a stretch force.

It is generally agreed that ballistic stretching – such as kicking, bouncing and other fast movement to the end of a joint's range of motion is **not the safest way to make a muscle longer**. This is because ballistic movements cause a reflexive contraction of the muscle being stretched, and this response can increase the risk of injuries such as muscle pulls.

Gentle bouncing or pulsing can be a useful way to round off a thorough warm up sequence. Indeed, ballistic movements are frequently used in choreography so dancers cannot avoid using them entirely.

What is important to note is that **ballistic stretches should only be used at the end of a thorough warm up, just before explosive sequences of jumps or leaps**.

(e.g. The ballistic action of grand battement comes at the end of the exercises at the ballet barre, just as the grand jeté is incorporated into sequences near the end of class when the body should be quite warm after being active.)

Ballistic stretching is **similar to dynamic stretching but in ballistic stretching the limbs move much faster** (at a speed that equates to the speed reached during dance performance).

As with any form of stretching, **the muscles should be warm before starting the stretch**.

- Choose the target muscles and position for stretching.
- Move the muscle through its full range of movement as fast as necessary (e.g. swinging an extended leg up and forwards).

Frequently Asked Questions about  
**STRETCHING**



*Popular questions answered...*

### *When is the best time to stretch?*

**After class** when muscles are warm.

Do not stretch before a performance or a major rehearsal as this has been shown to have detrimental effects on jumping.

### *How long should I stretch for?*

Holding a static stretch for **30 seconds** is enough to maintain joint range of motion and current flexibility.

When trying to increase flexibility, ensure that you stretch after a dance class (or any other physical activity), when muscles and connective tissues are warm.

**Three to five repetitions of a 30 second static stretch is sufficient** to stretch muscle tissue in these conditions for flexibility gains.

### *How much should I stretch?*

It depends on your body. **Every dancer's body is different** and it is important to avoid comparing your flexibility with that of your peers.

**If you are already very loose, you will not need to stretch as much as a tight dancer and should focus on strengthening exercises instead.** Increasing any hyper-mobility can have the negative consequence of reducing the stability of joints and putting you at risk of injury – so work on mastering strength to ensure your flexibility does not get the better of you!

**If you are very tight, work to make small gains in flexibility.** Always stretch with caution and ensure that you hold stretches to a point of mild discomfort, not pain. Do not push your body too hard!

### *How often should I aim to stretch?*

Stretching just **once a week is enough to maintain current flexibility** and stretching **three to five times a week** will increase range. **If you take more than one dancing class a week and stretch after each one, you are already on your way to making improvements!**

There appears to be little benefit in doing more than four repetitions within a bout of stretching so take care not to become too obsessed with stretching. Time should also be spent investing in other elements of your dance training (strength, musicality, technique).

## SAFE STRETCHING TIPS:

Avoid pushing into a stretch too hard...

If a muscle is stretched too far too quickly, a protective 'stretch reflex' occurs. This is where the muscle contracts to prevent further stretching and possible damage. To increase flexibility, it is important to stretch past this point in a controlled manner.

**To improve flexibility, the intensity of the stretch should be low and the body's stability muscles should not have to get involved in maintaining the stretch position.** So, for example, if you use the barre or a wall to provide stability while stretching the quadriceps you will achieve a better stretch.

If you perform stretches correctly, in time you should be able to increase your range of movement AND the overall quality of your movement.

After all, **even small restrictions and minor muscle imbalances can gradually alter movement patterns and cause potential injury.** Rectifying tightness will help you move more easily, not just achieve higher leg extensions.

Don't get too settled but do stay in alignment and remember to breathe...

**Adjusting your position slightly and repeatedly while stretching can help you to find a position that encourages the release of tension and lengthens the target muscle(s).** Becoming accustomed to making slight adjustments while stretching means that you can refine the stretch to fit your body and the way it feels in the moment. This will allow you to develop a heightened sensitivity to how your body feels and where tension needs to be released.

Breathing is another important strategy for encouraging the release of muscular tension so that the targeted muscles can lengthen. **Breathe slowly and evenly, with an emphasis on the exhale,** when stretching to maximise the positive effects.

Always **ensure that your alignment is correct** while stretching.

**Hold a stretch for 30 seconds, release and then repeat.** (Avoid simply "sitting" in a stretch as there is no benefit in terms of flexibility gains and you could risk reducing your joint stability.)

## ORDER OF STRETCHING:

Start with **spinal stretches** before moving on to the **limbs**.

After the barre in a ballet class, it is essential to **stretch out your quads and calves** before indulging in other stretching exercises.

If you only have a short amount of time for a cool down, **work on stretching out tight muscles before your most flexible muscles to gain maximum benefit**.

## STRETCHING AND GROWTH:

Young dancers will go through a time of minimum flexibility at around age 10-12 years as a result of their **skeletal growth spurt**. During this period of rapid growth, muscle tissues do not grow at the same rate as bones lengthen and there is an increased chance of injury to muscle. The apparent loss of flexibility should not be dwelled upon.

Understandably, flexibility gains will be tremendously difficult to achieve during this stage of growth. Nonetheless, efforts can still be made to maintain flexibility as much as possible so that progress can be continued once dancers emerge from their individual growth spurts.

Increasing flexibility without limits may predispose dancers to injuries so extreme flexibility is not the objective to have in mind when stretching.

Instead, the goal should be to acquire enough range of motion to execute dance movements without undue restriction.

IF PERFORMING A STRETCH IS PAINFUL, STOP.

Stretching to improve flexibility may be slightly uncomfortable as you work to further your range of motion but it should never be painful.

### Bibliography

Dance UK. "Warming Up and Cooling Down". *Dance UK Information Sheet 3*. Dance UK. 2013. Print.

Welsh, Tom. *Conditioning for Dancers*. Gainesville: University Press of Florida, 2009. Print.

Wyon, Matthew. "Stretching for Dancers". *International Association for Dance Medicine and Science*. 2011. Web. <http://www.iadms.org/?353>