

Warm-up and Cool-down

Stretching, Warm-up and Cool-down

A regular stretching, warm-up and cool-down routine is an essential component of any athlete's program no matter what their age or competition level. Although young children are generally more flexible than their older counterparts, it is important to establish good training and playing routines early, rather than trying to introduce them at a later stage when injuries may have already occurred.

STRETCHING

Aims of a stretching program:

- Increased muscle flexibility
- Enhanced performance
- Reduced risk of injury
- Enhanced healing of injured tissues
- Reduction in pain associated with muscle and joint stiffness.

Types of stretches

There are four main types of stretches:

1. Dynamic – when limbs are moved through a full range of motion at steadily increasing speed.
2. Ballistic – when a muscle is placed in a lengthened position and then a bouncing or jerking movement is used to increase the amount of stretch.
3. Static – when a muscle is placed in a lengthened position and then a gentle sustained pressure is applied to the muscle.
4. PNF – combines a series of muscle contractions and static stretches.

The most appropriate forms of stretching for junior netballers are dynamic and static stretches. Ballistic and PNF stretches require a higher level of co-ordination not usually developed in the 5-10 year age group.

Dynamic stretches

Dynamic stretches have been found to be most effective when performed prior to activity as part of a warm-up routine, gaining short-term increases in flexibility and reduced injury rates.

They involve movement through range during sport-specific activity at gradually increasing speed. Movement should be well controlled and not forced to avoid injury. Each movement should be repeated about 12 times allowing a gradual increase in range of motion and flexibility.

Dynamic stretches are best performed following 5 minutes of aerobic exercise allowing for increased blood flow to the muscles and reduced stiffness.

These stretches should incorporate age appropriate balance activities.

Points to remember

- Dynamic stretching improves flexibility for one to two hours and when combined with a warm up routine may be effective in reducing the incidence of injury.

- Dynamic stretches should be sport specific.
- The dynamic stretching component of a NetSetGO! warm-up session should be performed after five minutes of aerobic activity.
- Each movement should be repeated 12 times at steadily increasing speed and range.
- 3-5 minutes should be spent on dynamic stretches during a 10-15 minute warm-up.

WARM-UP

Warming up prior to participating in sport prepares the mind, heart, muscles and joints for play. It also improves performance, increases flexibility and reduces the risk of injury. A 10-15 minute warm-up, which includes age-appropriate activities, is suggested prior to playing netball at junior levels.

An effective warm up for players participating in a NetSetGO! session should include:

1. Aerobic activity of five minutes duration
2. Dynamic stretches of 3-5 minutes

For those players warming up prior to playing a game the following is suggested:

1. Aerobic activity of five minutes duration
2. Dynamic stretches of 3-5 minutes
3. Sport specific drills of five minutes duration.

EXAMPLE OF A NETBALL SPECIFIC WARM-UP

1. Aerobic component – five minutes

Junior netballers will appreciate fun warm-up activities. This may include games such as:

- *Stuck in the mud* – When one or more persons have to tag other players causing them to be "stuck in the mud". A player is unstuck when touched by another unstuck player.
- *Bean game* – Players walk or run around whilst listening for various commands given by the coach. These commands are attached to certain movements that the players must perform. A command of "jumping beans" means that players must jump around the court until the next command is given. A command of "broad beans" means a player must walk, taking as large as strides as possible. A command of "tall beans" means a player must walk on their tip toes with their arms up-stretched. A command of "balance beans" means the player must balance on one leg. A command of "dwarf beans" means the player must make themselves as small as possible. When "baked beans" is called the caller tries to catch everyone and sticks to them by joining hands. Caught beans then help to catch other players until no one is left unstuck.
- *Up/Down/Stop/Go* – Players walk or run around listening for commands given by the coach. A command of "Go" means to stand still. A command of "Stop" means to move around. A command of "Up" means the player must crouch down and a command of "Down" means the player must stretch up to the sky. This is especially helpful for developing listening skills and reactions.

2. Dynamic stretches – 3-5 minutes

Lunge walks

Keeping the stomach tucked in and back straight, take a step forward, dropping the back knee towards the ground. Alternate legs.



High knees

Keeping trunk upright, step forward lifting alternate knees up.



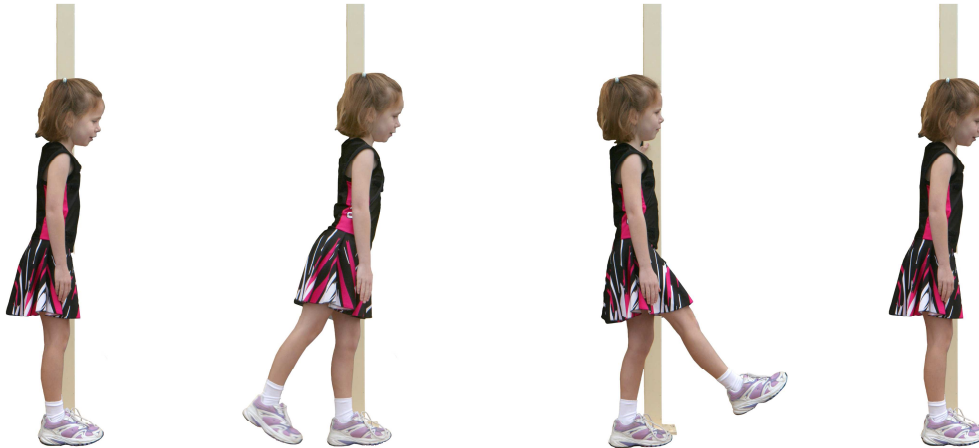
Side steps with squat

Begin by standing as straight as possible. Take a step sideways then bring feet together. Keeping knees pointing straight forward, bend knees then straighten.



Leg swings forwards and backwards

Hold onto a solid object and balance on one leg. Keeping the body straight, then swing the other leg forwards and backwards.



Leg swings sideways

Hold onto a solid object and balance on one foot. Keeping body as straight as possible, swing the other leg from side to side.



Arm circles

Standing tall and still, circle arms backwards then forwards.



Upper body trunk rotation

Keeping hips still, swing arms across body to shoulder height then back to sides.



3. Sport specific drills if preparing for a Netta game – 5 minutes duration. (Examples of appropriate drills can be found in the Skills and Drills section of the manual.)

Points to remember

- Warm up prior to playing.
- Include an aerobic component, dynamic stretching and sport-specific activity that is age-appropriate.
- Ensure stretches are done in a controlled manner to avoid injury.
- Make it fun.

Static stretches

Static stretches are best used to gain an increase in overall muscle length and subsequent increase in joint range. A muscle may become shortened following injury, during a period of accelerated growth, when experiencing an excessive load such as increased training and playing frequency or due to poor biomechanics. Increased training or playing frequency are unlikely to be common issues in the junior netballer, however, poor biomechanics can lead to reduced muscle flexibility at an early age thus predisposing the player to injury.

Static stretching involves the taking of the muscle to its lengthened position, where a mild discomfort should be felt, and then maintaining this position for a specified period. This time may vary depending on whether short or long-term gains are wanted in the muscle length. If a static stretch of 30 seconds to one minute's duration is applied and repeated four times every day, an improvement in muscle length should be seen plateauing at about week seven. If gains lasting only one to two hours are wanted stretches of 30 seconds duration may be used.

Static stretching has been found to be more effective when the muscles are warmed prior to stretching. Hence a static stretching program is ideally performed as part of a cool-down following a game or training session.

Points to remember

- Static stretching increases muscle length and is most effective following aerobic exercise; for example after playing/training.
- Each stretch should be applied slowly to the point of slight discomfort but not pain.
- Stretches should be held for 30-60 seconds and repeated four times on each muscle group.
- Target muscle groups that have a high demand placed on them.

SUGGESTED NETBALL SPECIFIC STATIC STRETCHES

Long calf muscle (Gastrocnemius)

Keep back heel on the ground and knee straight. Bend the front knee until a gentle stretch is felt up the back of the calf.



Short calf muscle (Soleus)

Keep back heel on the ground. Bend back knee until a gentle stretch is felt at the base of the calf.



Front of thigh (Quadricep)

Pull heel towards the bottom until a gentle stretch is felt along the front of the thigh.



Back of thigh (Hamstring)

Sit with leg outstretched to front. Gently lean forwards from the hips until a stretch is felt up the back of the leg.



Hip flexor

Kneel on the ground. Keeping back straight and bottom tucked in, lean forward from the hip until a gentle stretch is felt at the front of the hip.



Groin

Sit on the ground. Keep the back straight and gently push the knees towards the ground until a stretch is felt in the groin area.



It is suggested that coaches choose two of the static stretches to target each NetSetGO! session. Following a Netta game or longer session it may be appropriate to stretch all muscle groups.



COOL-DOWN

A 5-10 minute cool down following a game/training is recommended to reduce injury risk, increase long term flexibility and improve recovery from activity.

An effective cool-down for junior netballers should include:

1. Low intensity aerobic activity of three minutes
e.g. slow jog around court.
 2. Static stretching program of four minutes.
(Refer to previously suggested routine.)
 3. Implementation of other recovery strategies.
Whilst players are stretching it is the perfect time to encourage further recovery strategies.
- Rehydration often needs to be encouraged especially in young players who are more susceptible to dehydration. This may involve the intake of water or sports drinks. Thirst is a poor indicator of dehydration and the amount of fluid required varies from individual to individual.
 - Any injuries should be taken care of at this time with RICER (rest, ice, compression, elevation and referral) principles applied. Care should be taken with the application of ice on young players. A period of 10 minutes is suggested with additional padding between the skin and ice to avoid an ice burn.

It is essential for all netballers to establish good stretching, warm-up and cool-down practices, no matter what their age, in order to reduce the likelihood of injury, enhance play and allow optimal recovery. Emphasis should be placed on the development of a consistent routine, both at training and when playing, to ensure the integration of these important components throughout playing years.

It must be remembered that the information presented is based on the best current available practice. For future updates refer to the Netball Australia website or consult an appropriate health professional.