



Forearm Pronators and Supinators

Purpose:

Designed to **improve the strength and function of the pronators** [Pronator Teres & Pronator Quadratus & Brachioradialis] and **supinators** [Supinator and Biceps Brachii & Brachioradialis] of the forearm.

*NOTE: this exercise incorporates our **Thumb, Finger Flexors and Extensors & Wrist Flexors and Extensors exercises** as both the finger and wrist flexor and extensor muscles are required to maintain a firm grip on your Powerball®. It is the additional movements that recruit the other muscles in this exercise.*

Useful For:

Anyone who needs or wants to maintain or develop strength in pronation and supination. Suits a wide variety of sports people for whom strength of pronation and supination is important; tennis, squash, badminton, rugby, American football, softball, baseball (especially pitching), golf, javelin, pole-vault etc.

In the non-sporting arena; anyone involved in manual work e.g; plumbers, electricians, carpenters, assembly line workers etc.

Can be utilised as part of rehabilitation, recovery and maintenance following:

- **Fracture of radial head or proximal ulna where the range pronation/supination has diminished as a result of surgery or immobilisation post-surgery;**
- **Rupture of long-head of Biceps (to maintain strength of remaining muscle)**

Let's Begin

- 1 Grip Powerball® firmly in the palm of the hand and secure by gripping with thumb and four digits.
- 2 Now, start your Powerball® in the palm down position i.e. palm facing the floor with your elbow flexed to almost 90° [see figure 1].- if you don't know how to, check out the **Getting Started** page on **Powerballs.com** for videos and instructions.



figure 1 – Palm down/pronated with ball firmly gripped

- 3 Begin with relatively low rotor speed [5000-6000rpm] but increase quickly by speeding up your wrist rotation while narrowing the circle circumference (i.e. start with wide, lazy circles and then, as the RPM increases, reduce the size of the circles to increase the rotor speed).
- 4 Once you are up and running, and while the arm remains in a horizontal position, begin to supinate [rotate your hand to a palm-up position] and then pronate back to a palm-down position at slow regular intervals. See figure 2 for palm-up [supinated]/palm-down [pronated] positions.



figure 2: Palm up/Supinated & Palm down/Pronated

Recommended Guideline Programme

Initial Session: 3 X 30 seconds with a 1 minute break between each one. Use this session to establish the RPM at which you are challenged but can still maintain a solid grip on Powerball®.

Progression:

- Week 1:** 3 X 30 seconds with a 1 minute break between each one on **alternate days**.
- Week 2:** 3 X 30 seconds with a 1 minute break between each one **daily**.
- Week 3:** 3 X 60 seconds with a 1 minute break between each one on **alternate days**.
- Week 4:** 3 X 60 seconds with a 1 minute break between each one **daily**.

Further progression can be achieved by increasing the frequency, the repetitions or the duration.

Caution: Rehabilitation following surgery should be approached with care to avoid aggravating structures that are still recovering. Powerball® develops resistance that is directly proportional to the speed at which the rotor is spinning, consequently, you should always spin conservatively when using this product for the first time until you fully establish the resistance levels you are able to tolerate.

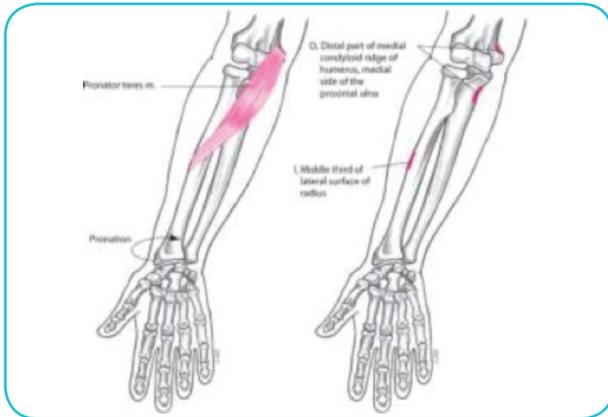
Similarly, the frequency of exercise may need to be modified from that outlined above to allow for longer rest periods between individual exercise sessions. If you are experiencing pain or discomfort, consult a qualified healthcare practitioner before embarking on this exercise.

Some muscle fatigue is to be expected with this exercise much in the same way your muscles might react to a gym workout. However, if you experience actual pain, you should reduce the exercise frequency, repetitions or duration.

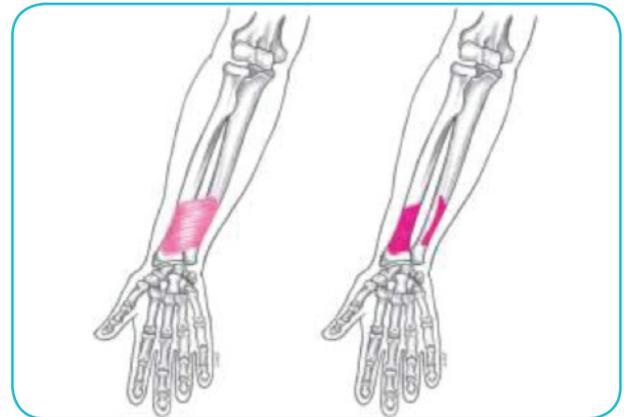
If the pain persists or increases, you should discontinue the exercise and consult a healthcare professional.

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Muscles involved in this exercise



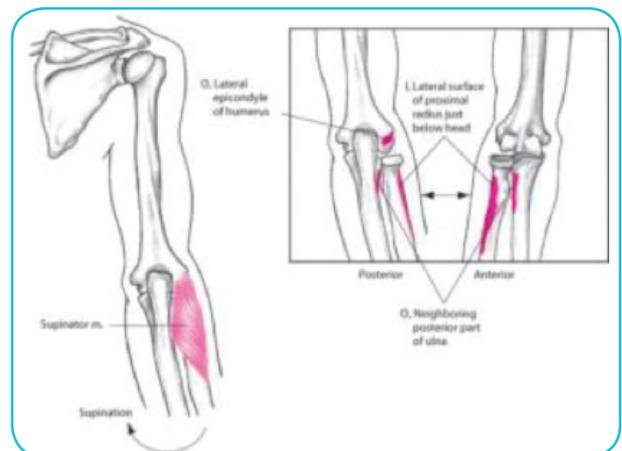
Pronator Teres



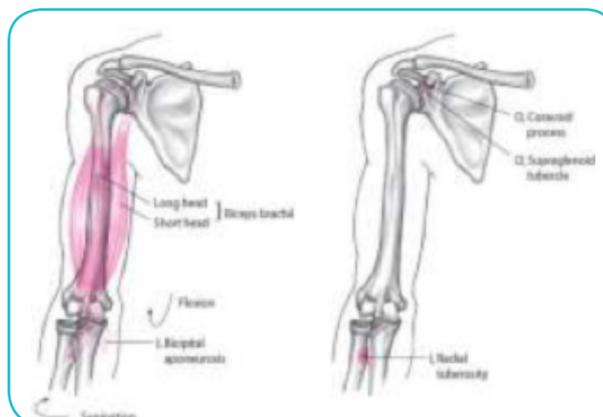
Pronator Quadratus



Brachioradialis



Supinator



Biceps Brachii

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Remember

You are looking to achieve a smooth, progressive spin which will test your fingers by requiring them to grip Powerball® firmly as the speed increases; if you have strong, injury-free fingers, you may find that 5,000 - 6,000rpm isn't challenging the muscles sufficiently. Therefore simply increase the spin speed until you arrive at a point where there is gentle fatigue building in the tissue and you're having to work hard to maintain that firm grip around the shell to avoid dropping Powerball®. Holding this state for 30 - 60 seconds will produce definite results.



Learn More

As always, progress is achieved by following a regular exercise programme, further details regarding usage frequency, repetition and spin technique can be found on our website powerballs.com.



Important

Should you experience any pain or discomfort when exercising with Powerball® or in general, speak to your physio or qualified healthcare practitioner to get the best advice and support.