



# The Thumb, Finger Flexors and Extensors

## Purpose:

Designed to **improve the strength of the thumb/finger flexors and thumb/finger extensors** by minimising the gripping effect of the stronger wrist flexors and extensors. It is impossible to eliminate the actions of the stronger wrist flexors and extensors entirely to isolate the finger muscles as these are required to stabilise the wrist to facilitate the precision grip.

## Useful For:

Anyone who needs or wants to maintain finger-tip grip strength e.g. musicians, manual therapists, computer keyboard users.

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

- **Medial Epicondylitis (golfer's elbow)**
- **Lateral Epicondylitis (tennis elbow)**
- **Carpal Tunnel Syndrome**
- **Repetitive Strain Injury (R.S.I.) of wrist and hand**

## Let's Begin

1

Grip Powerball® firmly between thumb and four digits using a precision grip [see figure 1].

2

Make sure your Powerball® is not seated directly into the palm of the hand by ensuring there's a gap between the palm of your hand and the top of your Powerball®.

3

Now, start your Powerball® - if you don't know how to, check out the **Getting Started** page on **Powerballs.com** for videos and instructions.



figure 1

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- 4 Initially try to keep the RPM at a low level; up to 5,000 or 6,000rpm is fine for most people, as this is an intensive workout for relatively small muscles – **with this exercise it's very important that your arm remains static and you're spinning only through the wrist.** At higher RPM's, the force required to retain your grip on Powerball® may be more than you can generate with your fingertips. Your Powerball® may be damaged if you lose control and drop it.
- 5 Take your time to figure out the RPM at which you are challenged but can still maintain a solid grip on the ball - spin speed will always depend on your personal strength and fitness level, plus whether you are using Powerball® to rehabilitate a pre-existing injury or using it to build muscle strength.

## 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®.

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**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.**

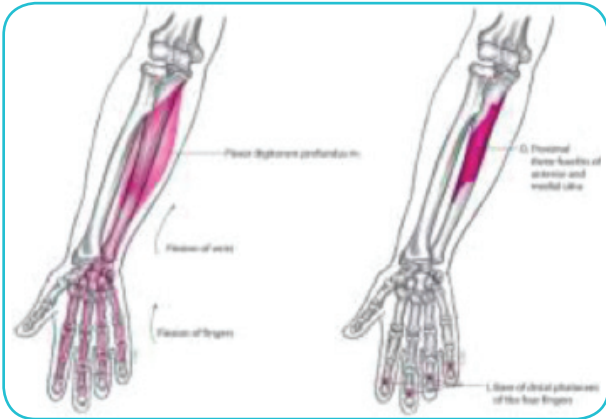
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**Caution:** The finger extensors can be implicated in conditions such as lateral epicondylitis (tennis elbow). If you are experiencing pain or discomfort, consult a qualified healthcare practitioner before embarking on this exercise.

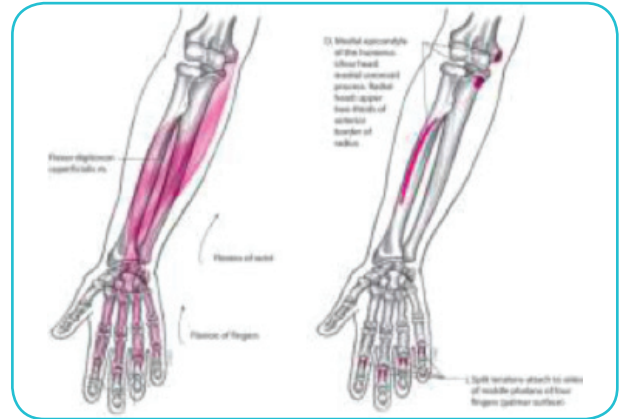
Some muscle fatigue is to be expected with this exercise much in the same way your muscles might react to a gym workout. However, if you experience pain, you should reduce the exercise frequency, repetitions or duration. If the pain persists or increases, you should discontinue the exercise and consult a healthcare professional.

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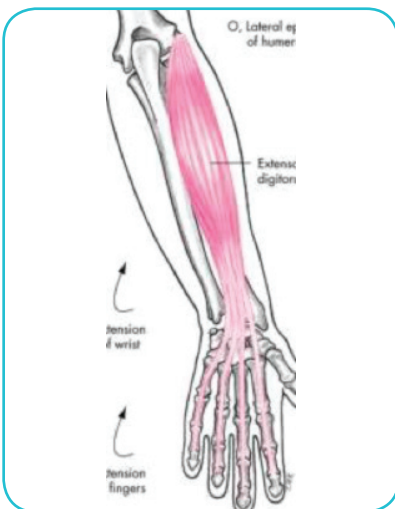
# Muscles involved in this exercise



*Flexor Digitorum Superficialis*



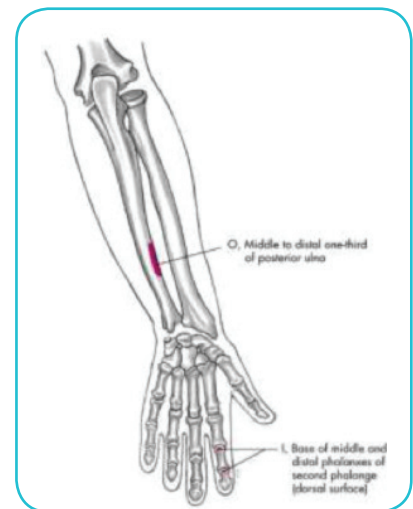
*Flexor Digitorum Profundus*



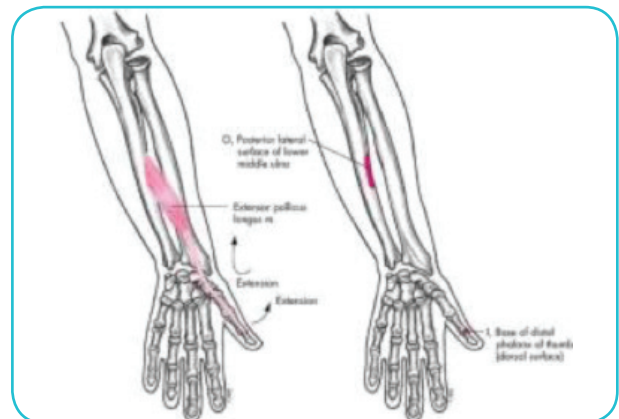
*Extensor Digitorum*



*Extensor Indicis*

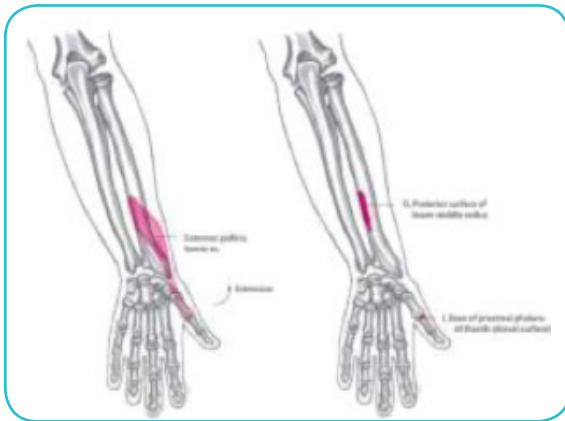


*Extensor Digiti Minimi*



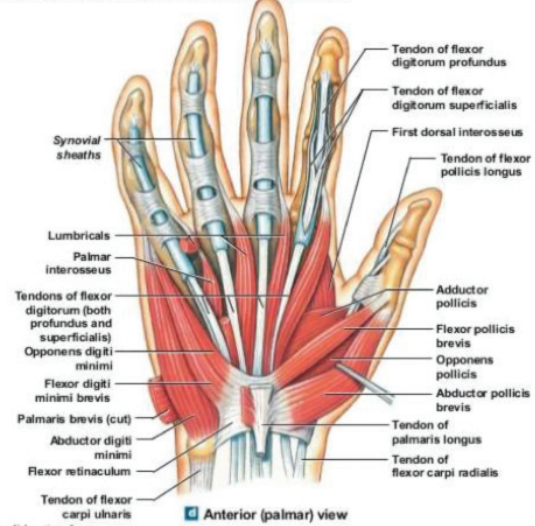
*Extensor Pollicis Longus*

## The Thumb, Finger Flexors and Extensors



*Extensor Pollicis Brevis*

Figure 11.11d Intrinsic Muscles, Tendons, and Ligaments of the Hand



*Additional hand muscles involved in gripping: Adductor Pollicis, Opponens Pollicis, Opponens Digiti Minimi, Lumbricals*



### Remember

You are looking to achieve a smooth, progressive spin which will test your fingers by requiring them to grip your 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](http://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.