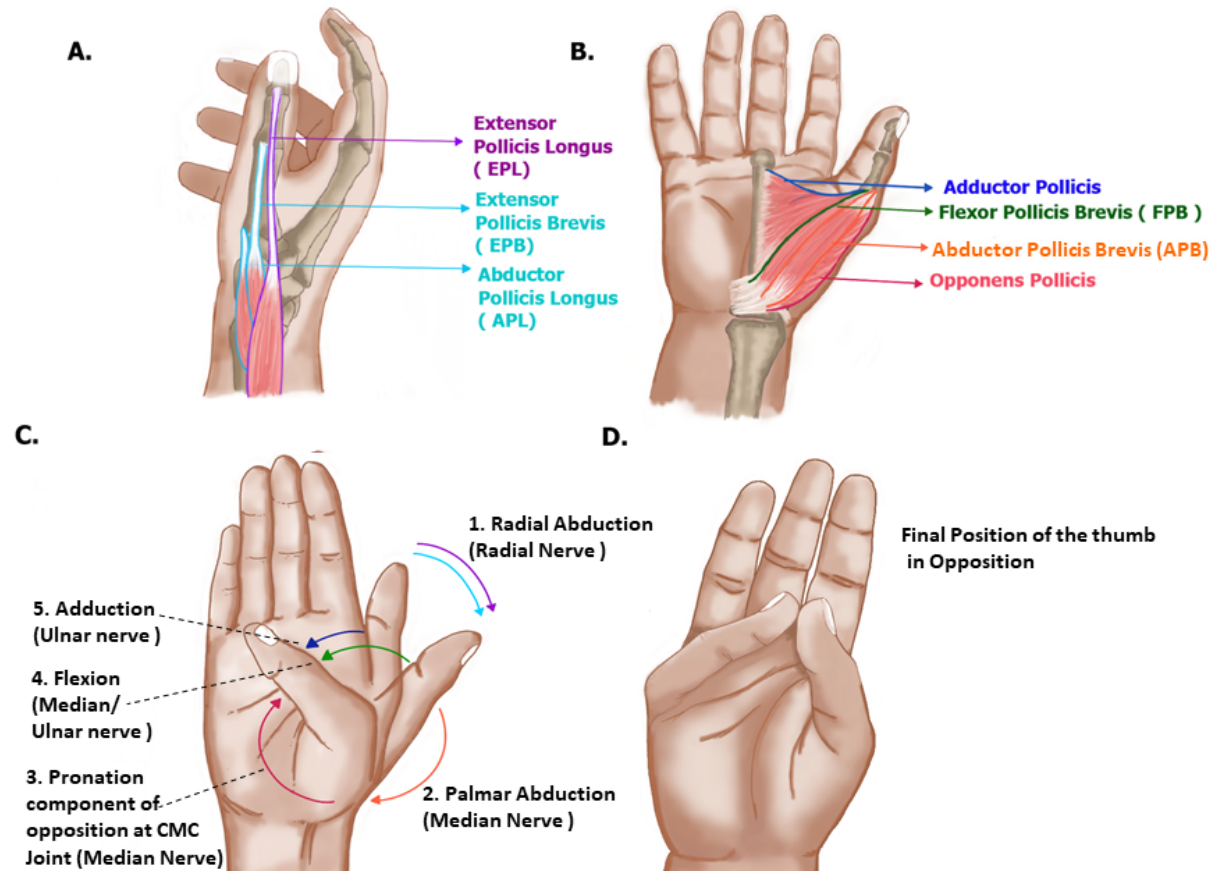


DIAGRAMMATIC REPRESENTATION OF THE THUMB OPPOSITION

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1: The opposition of the thumb is a complex- near circumduction movement. This is a function of the thumb muscles innervated by all the three nerves in the hand. The arc of motion is initiated by the radially innervated muscles going through the median and eventually the ulnar innervated muscles.

The movements occurring sequentially are 1. Radial abduction, 2. Palmar abduction, 3. Pronation component of opposition owing to the saddle nature of the first Carpometacarpal joint (occurring along with abduction and flexion) 4. Flexion and 5. Adduction [**Fig 1.C**] to lead to the final position of the opposed thumb [**Fig 1.D**].

The Radial Abduction movement is initiated by the Radially innervated EPL (Extensor Pollicis longus), EPB (Extensor Pollicis Brevis) and APL (Abductor Pollicis Longus) [**Fig 1.A**].

Following this, the palmar Abduction and pronation movements are performed by the Median nerve innervated APB (Abductor Pollicis Brevis) and Opponens Pollicis. Next the thumb flexion is mediated by Median/Ulnar Nerve innervated FPB (Flexor Pollicis Brevis). Finally, the ulnar nerve innervated Adductor Pollicis contracts to give force against the held object [**Fig 1.B**].

This range of arc is affected in all the nerve palsies. In radial nerve palsy the dorsal part of the circle, in median nerve palsy the main central part of the arc and in ulnar nerve paralysis the final inner part of the circle are compromised.

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