

The Absence of the Palmaris Longus Muscle and How it Compares to Other Vestigial Muscles

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Background:

- A vestigial muscle is a muscle that was used in the past but due to evolution is no longer needed today
- The Palmaris Longus Muscle is absent in anywhere for 1.5%-63.9% of the population of humans (Alabbad, et al. 2018)
- There are vestigial muscles all over the body including two in the head and neck, six in the upper limbs, three in the thorax, and one in the lower limbs (Wahl, et al. 2022). See table 1

Introduction:

The Palmaris Longus muscle is a muscle that has not been researched much. The Palmaris Longus muscle is extensively used by primates and monkeys. The absence of the muscle is determined with a couple of different tests (see Figure 1) including the Shaefer test and the Thompson test.

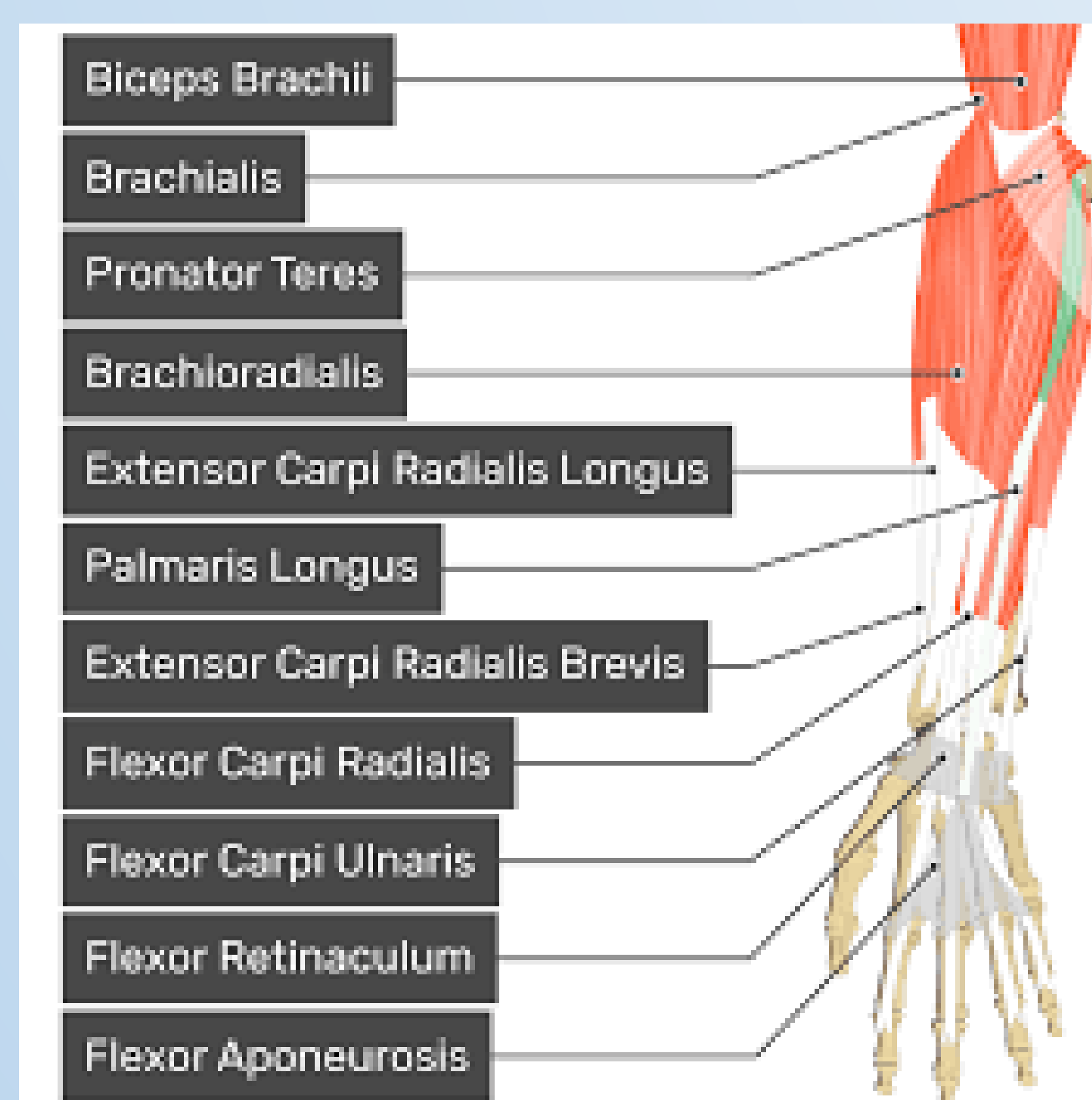


Figure 1: This is the Palmaris Longus muscle when present in the left arm in the anatomical position surrounded by the other muscles in the forearm.

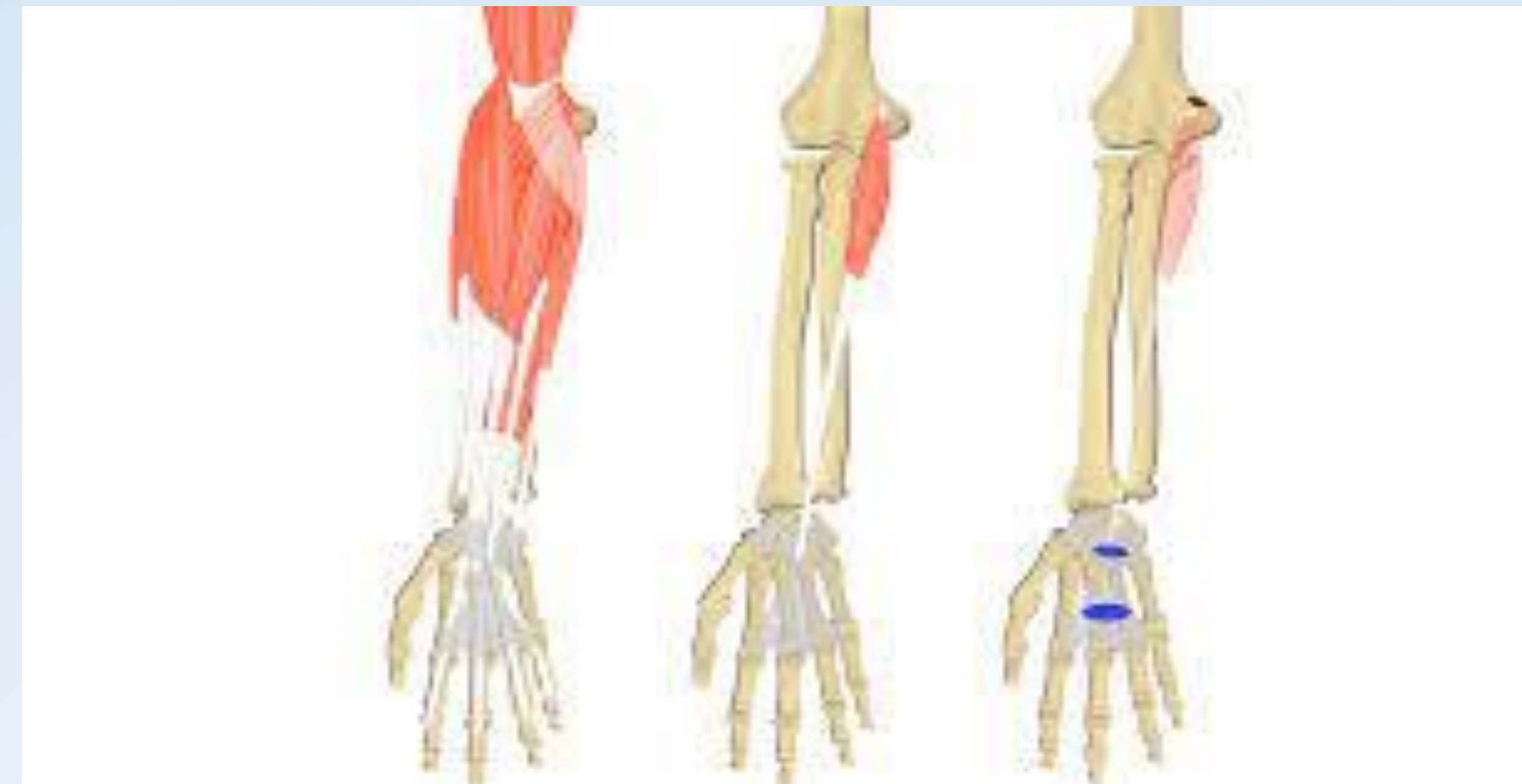


Figure 2: An illustration of the Palmaris Longus muscle of the left arm in the anatomical position (center) with all other muscles in the forearm (to the left) and the point of origin and insertion labeled (to the right)

The Vestigial Muscles in the Upper Limbs in Humans:

Table 1:

Muscle Name	Absence
Palmaris Longus	1.5-% 63.9%
Palmaris Brevis	3%
Extensor Digitorum Brevis Manus	97%-99%
Condroepitrochlearis	99%
Lattissimocondyloideus	95%
Contrahentes Digitorum	100%

This table shows the muscle and the amount of absence that is seen in the human population.

Conclusion:

The absence of the Palmaris Longus muscle is dependent on the country and region that the person inhabits. There are no genetic linkages and no set percentage for any one location. This differs from other vestigial muscles because other vestigial muscles have a set percentage of absence depending on region and location.

The Palmaris Longus Muscle Absence Tests:

There are 5 tests that can be run to see if you have the Palmaris Longus Muscle or if the muscle is absent.

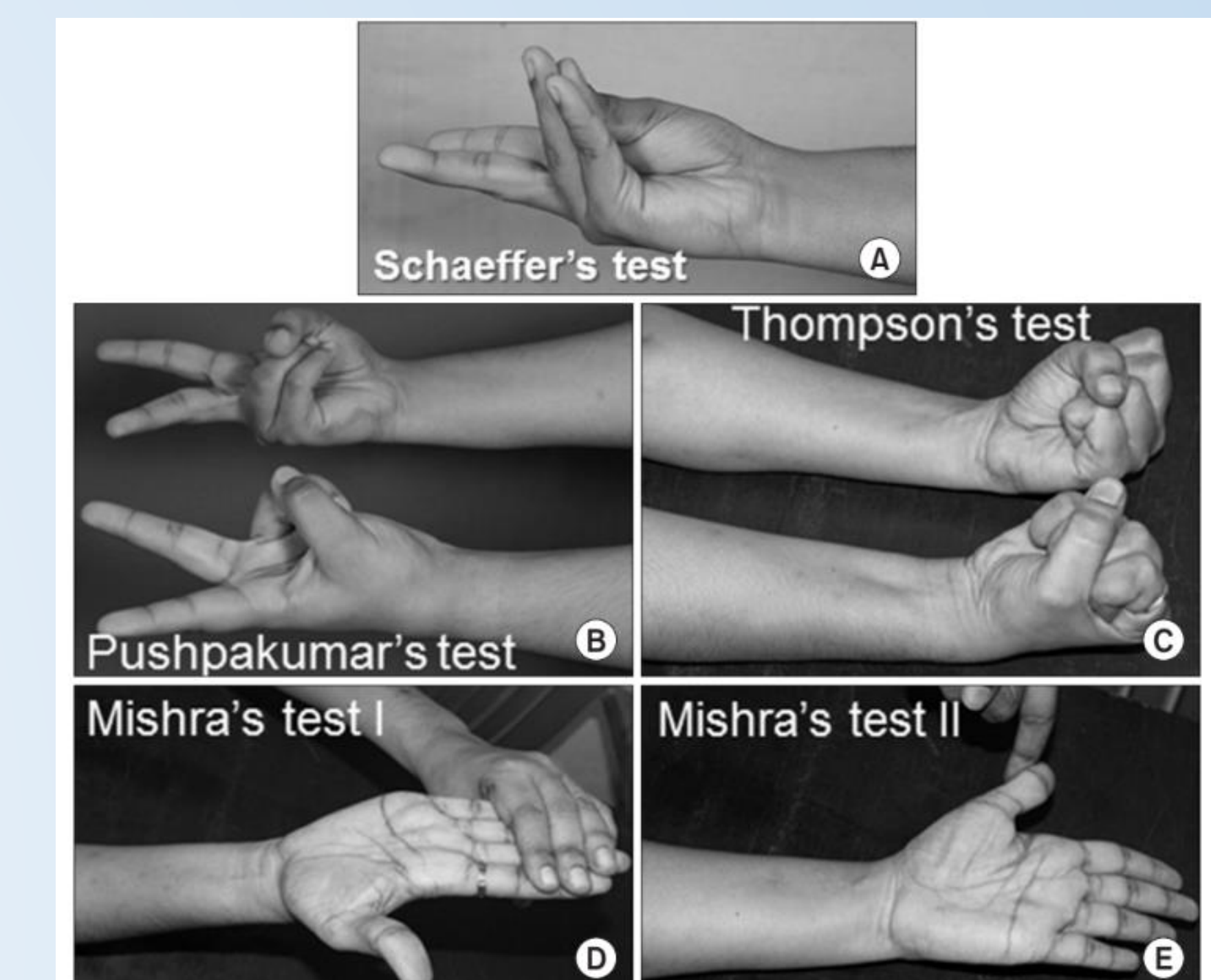


Figure 3: Five different tests can be performed to test for the absence of the Palmaris Longus muscle.

References:

Alabbad A, Alkhamis M, Alsultan M, Alahmad S. 2018. The Frequency of Palmaris Longus Absence among Female Students in King Faisal University in Al-Ahsa, Saudi Arabia. *The Egyptian Journal of Hospital Medicine*. 70(11):1959–1962.

Wahl L, Lee R, Olewnik Ł, Iwanaga J, Georgiev GP, Ravi KS, Dumont AS, Tubbs RS. 2022 Feb 25. Atavistic muscles in human anatomy: Evolutionary origins and clinical implications. *Anatomia, Histologia, Embryologia*. doi:<https://doi.org/10.1111/ahe.12796>.

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