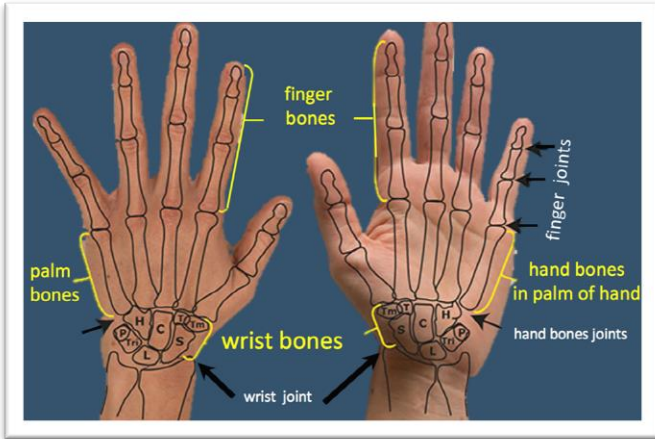


## The Hand and its joints – Anatomy

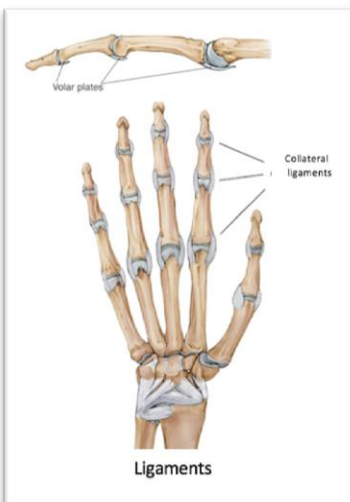
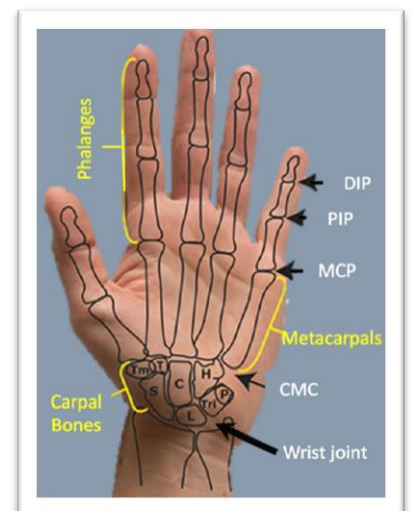
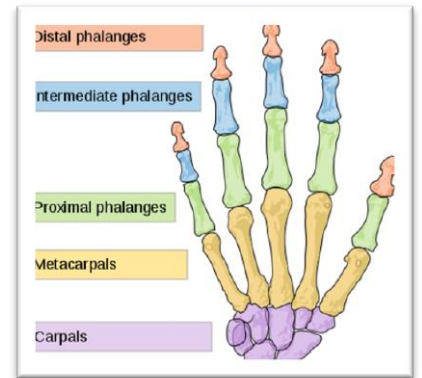
## Die Hand en al sy gewriggies – Anatomie



The hand and all its' joints are a very complex and intricate system. Due to the complexity, this is only a brief overview of the hand anatomy. The hand has many movements and functions. The hand consists of 27 bones.

Die hand met al sy gewigte is 'n baie komplekse sisteem en is daarom instaat om verskeie bewegings en funksies te verrig. Die hand bestaan uit 27 handbeentjies. In 'n neutedop, kan die hand as volg opgesom word.

There are 14 finger bones (**Phalanges**), 8 wrist bones (**Carpal bones**), and 5 hand bones (**Metacarpal bones**) in the hand. Most of these bones articulate with one another where they form joints. All the joints are covered with cartilage on their articulation surfaces to ensure smooth and frictionless movement. The wrist joint is formed where the two forearm bones (Radius and Ulna) meet up with the wrist bones (Carpal Bones). The joints in the fingers are known as the interphalangeal joints- distally and proximally, and in the hand there are the metacarpal-phalangeal and carpo-metacarpal joints. All joints are enveloped by capsules. The membranous sacs are filled with synovial fluid which not only allows for smoother movement, but also protects the joints against day to day damage. The joint capsule together with the ligaments stabilizes the joints and assists with stability and strength when moving through the ranges.



Daar is 14 vinger beentjies (Falanges), 8 pols beentjies (Karpaal), en 5 hand beentjies (Metakarpaal) in die hand. Meeste van die bene artikeer met mekaar tydens beweging. Al die gewigte se artikulere oppervlakte is met kraakbeen bedek om sodoende te verseker dat die gewigte glad en met amper geen weerstand kan beweeg. Die pols gewrig word gevorm waar die twee bene van die voorarm(Radius en Ulna) en die pols beentjies (Karpale bene) bymekaar kom. Die gewigte in die vingers staan bekend as die

distale en proksimale interfalangeale gewrigte, en in die hand is daar ook metakarpale falangeale, asook karpaal-metakarpale gewrigte. Al die gewrigte is omsluit met bindweefsel, in die gewrigsholte word daar 'n sinoviale vloeistof aangetref wat nie net help dat die gewrig makliker kan beweeg nie, maar ook help om die gewrig te beskerm. Die bindweefsel en ligament stabiliseer en versterk die gewrigte tydens beweging.

The hand is supplied by 3 nerves (Median, Ulnar and Radial) — each of these nerves are rendering very specific function with regards to sensory (feeling) and motor (movement) functions. The hand is supplied with blood via two arteries (Radial and Ulnar).

Daar is drie senuwees wat die sensoriese (sensasie) en motorise (beweging) werking van die hand voorsien (Mediane senuwee, Ulnere senuwee en die Radiale senuwee. Die hand se bloedvoorsiening kom van die Radiale en Ulnere arterie af.

The muscles in the hand can be divided into two categories, those who are in control of gross motor movements and power grips (**extrinsic muscles**), and those responsible for the small and fine motor movements – precision of the hand (**intrinsic muscles**).

Handbeweging word deur verskeie spiere in die hand veroorsaak. Die spiere kan in twee groepe ingedeel word: die spiere wat die growwe motories bewegings moontlik maak (**Eksintrieke spiere**) en die spiere wat die fyn en akurate bewegings uitvoer (**Intrinseieke spiere**).

