

# Hallux valgus, hallux varus and metatarsus adductus terms are misnomers

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## Abstract

The terms *hallux valgus*, *hallux varus* and *metatarsus adductus* are misnomers. The time line when these misnomers started can not be easily determined. It is certain that these terms are fairly old. Over time, they have become so well engraved into the minds of the medical professionals, that it may not be easy to revert to referring to *hallux valgus* as *hallux varus* and vice versa or *metatarsus adductus* as *metatarsus abductus*. Let the reader be informed of the correct terminology, and act on this information however he or she believes to be most fitting, as in other similar situations.

**Keywords:** *hallux valgus*; *hallux varus*; *metatarsus adductus*; misnomer

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In the original Latin, the definition of *varus* and *valgus* is much different to current medical usage. *Varus* actually means “knock-kneed” and *valgus* “bow legged”.<sup>[1]</sup> The application of these words in adjectival form to other portions of the body by the medical community has resulted in changing their definitions. The term *varus* is used to indicate warped inward or deviation of the distal skeletal elements or part towards the midline, and *valgus* is used to indicate warped outward or deviation away from the midline. In the current medical terminology, medial and lateral movements of the joints and pathological deviation of the bones of the upper and the lower limbs are described in reference to the midline of the human body, placed in anatomical position, bisecting the human body into two equal halves. Terms like *cubitus varus* and *cubitus valgus* at the level of elbow joint and *manus vara* and *manus valga* at the level of the wrist joint in the upper limb and *coxa vara* and *coxa valga* at the level of the hip joint, *genu varum* and *genu valgum* at the level of the knee joint and *talipes varus* and *talipes valgus* at the level of the intertarsal joints are examples of terminology applied to the lower limb.

However, when the movements of fingers and toes are described, then the functional or anatomical axis of the hand or foot are used, not the midline of the human

body. The axis of the hand passes through the middle finger and the axis of the foot passes through the second toe.<sup>[2]</sup> This is based upon the anatomy of the interosseous muscles, which are responsible for medial and lateral deviation of the fingers and toes. The palmar or plantar interossei produce the adduction movement (towards the axis of the hand or foot respectively), equal to the term *varus* used to describe the pathological deviation whereas the dorsal interossei of hand and foot produce the abduction movement (away from the axis of the hand or foot, respectively) and is equal to the term *valgus* used to define the pathological deviation. Similarly, the nomenclatures of the muscles have been derived. The adductor pollicis and adductor hallucis pull the thumb and great toe towards the axis of the hand and foot, respectively, whereas the abductor hallucis and abductor digiti minimi pull the first and fifth toes or little finger away from the axis of the foot and hand respectively.<sup>[3]</sup>

When defining the pathological deviation of the great toe, the midline axis of the human body in anatomical position is used as a reference line, not the anatomical axis of the foot. While the deviation of the great toe towards the anatomical axis of the foot or the adduction motion of the great toe or adducted great toe is defined as *hallux valgus*, the term *hallux varus* is more consistent

with the nomenclature of deformity and deviation of the great toe away from the anatomical axis of the foot, the abduction motion of the great toe or the abducted great toe is defined as *hallux varus*, though the term *hallux valgus* would be more appropriate. Similarly, terms like *metatarsus adductus* is used for defining the pathological deviation of the metatarsals toward the anatomical axis of the human body, whereas it might more appropriately be called the *metatarsus abductus*.

It is worth mentioning that renaming the *hallux valgus* to the *hallux varus* and vice versa may be difficult to be understood and accepted by those who did not receive advanced medical education and do not know details of anatomical postures such as those who are studying anatomy at a basic level, nurses and medical technicians, etc. It may also be difficult while explaining to a lay person or to a patient. The vast majority of these terms are also used by people who are not trained in medicine. Any attempt to change these well-established terms may result in confusion with unexpected consequences.

When we think in terms of anatomical terminology, these terms are not only directly related to the anatomy community but also to other clinical sciences (orthopaedics, pathology, etc.). Terminologies used in branches of clinical science other than anatomy are not available in “Terminologia Anatomica”. To avoid confusion, it is important that anatomical descriptions and pathological terminologies match each other.

Medical terms are products of cultures, the knowledge that existed at the time of their creation, the languages of their countries of origin, etc. There are many terms in use which are very different to the true meaning in the medical terminology. To give a few examples, rectum means a straight intestine, however we know that

human rectum is not straight. The terminology “rectum” derives from the studies of animals with straight intestines. The terminology “arteria” means an airway (breathing tube). This is very different from what it means today. It harks back to ancient times when the dissection of deceased animals produced a notion that the empty tubes found in the animal (in fact arteries that had been emptied on the death of the animal) transported air.

Such inconsistencies are the result of the dynamic nature of the practice of medicine where multiple practitioners have input, including anatomists and surgeons. A balance must be struck between the prescriptivist who calls for an adherence to the rules and forms of language for the purpose of accuracy in communication when the stakes are high, and the descriptivist, who would accept and embrace language as living and evolving, echoing the words of Samuel Johnson in his *Preface to A Dictionary of the English Language* (1755): “I reject the lexicographer who would embalm language in order to secure it against decay.” There is no right or wrong in this debate: let the reader be informed, and do with such information that which he or she sees to be most fitting, as in other similar situations.<sup>[4]</sup>

## References

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