

Terms relating to surgical implants —

**Part 5: Guidance on the usage of the
terms “valgus” and “varus” in
orthopaedic surgery**

Committees responsible for this British Standard

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- British Orthopaedic Association
- British Surgical Trades Association
- Ministry of Defence
- Royal College of Surgeons of England
- Scottish Office
- Coopted Members

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National foreword

This Part of BS 6324 has been prepared under the direction of the Health Care Standards Policy Committee and is identical with ISO TR 9586:1988 “*Implants for surgery — Usage of the terms “valgus” and “varus” in orthopaedic surgery*”, prepared by Technical Committee 150, Implants for surgery, of the International Organization for Standardization (ISO).

This Part of BS 6324 has been prepared as a result of international discussions in which the UK took an active part.

The list of Parts of BS 6324 currently published is as follows.

- *Part 1: Glossary of general medical terms;*
- *Part 2: Glossary of terms relating to mechanics;*
- *Part 3: Glossary of terms relating to materials;*
- *Part 4: Glossary of orthopaedic surgical terms.*

The intention of this Part of BS 6324 is to expand upon the explanatory material in Part 4, particularly with regard to the anatomical regions where the usage of “valgus” and “varus” is, or has been, anomalous.

The terms “valgus” and “varus” are defined, and brief explanatory notes are given in BS 6324-4 and, for the convenience of the reader of this Part of BS 6324, relevant extracts are given in National appendix A.

Textual errors. When adopting the text of the ISO Technical Report, the textual errors listed below were discovered. They have been marked in the text and have been reported to ISO in a proposal to amend the text of the technical report.

In *Figure 3(a)*, in the caption to the second example of preferred usage, the word “varus” in the last line should read “valgus”.

In *Figure 5(a)*, in the caption, insert “- varus” after “alternative interpretation”.

In *Figure 5(b)*, in the caption, insert “- valgus” after “alternative interpretation”.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

This Type 3 Technical Report has been prepared in order to state the differences in usage of the terms “valgus” and “varus” so that anomalies of usage, especially in relation to the hip joint, may be clearly understood and confusion minimized.

The Terminology Working Group (WG 1) of Technical Committee 150 (Implants for Surgery) of the International Organization for Standardization (ISO) has for some years been discussing the terms “valgus” and “varus” in an attempt to reach agreed definitions. The terms have been in use for centuries but their meaning seems to have varied from time to time. The present usage has developed in a haphazard manner, such that consistent definition of the terms seems to be impossible.

A discussion paper (document ISO/TC 150/WG 1 N 59) was prepared by ISO/TC 150/WG 1 and circulated widely throughout the world for comment. The results of the study of the comments reveal that the terms are now so ingrained in day-to-day use that it is most unlikely that they can be abandoned or replaced by alternative terms.

This Technical Report has been prepared in order to point out the differences in usage of the terms “valgus” and “varus” in orthopaedic surgery.

1 Scope and field of application

This Technical Report gives the present usage of the terms “valgus” and “varus” in orthopaedic surgery, and describes anomalies of usage in order that they may be clearly understood and confusion minimized.

2 Present usage

The terms “valgus” and “varus” are used to characterize certain deformities of limbs in the coronal plane of the body. The deformities may be centred on a joint or within the length of a long bone. The terms are mostly used in relation to deformities occurring in the lower limbs, and the only common use in the upper limbs is in relation to the elbow joint following supra-condylar fractures of the humerus, or abnormalities of the lower humeral epiphysis.

The term “valgus” equates to a movement of abduction, such that the limb distal to the point of deformity is angled away from the median plane of the body in the coronal plane. Conversely, the term “varus” is used when the part of the limb distal to the deformity is angled towards the median plane and thus equates to the movement of adduction (Figure 1). Thus “genu valgum”, meaning a “valgus” deformity of the knee, results in the limb distal to the knee being angled away from the other limb. “Tibia vara” indicates that there is a “varus” deformity of the distal tibia in relation to the proximal tibia.

It should be noted that distal deformity, particularly in a lower limb, tends to be balanced by an opposite deformity in the proximal part of the limb, and perhaps the commonest example of this is where “hallux valgus” is associated with a “varus” deformity of the first metatarsal (Figure 2). This concept is vital to the understanding of the reasons for the different usage of the terms “valgus” and “varus” in relation to the hip joint.

3 Anomalies of usage

There are four areas where the use of the terms is anomalous:

3.1 The foot

Normally the foot is considered to be in the horizontal plane of the body and thus, strictly speaking, deformities of the toes should not be characterized by the terms “valgus” and “varus”. However, traditional usage is such that it would be impossible to eradicate the terms in this context. “Hallux valgus” is probably the most common use for the term “valgus”.

It should be noted that in the instance of the big toe, “hallux valgus” in fact equates to the movement of adduction of the big toe although it conforms with the definition given above of the toe being angled away from the median plane of the body. The reason for this anomaly is obvious — the terms adduction and abduction in the foot relate to the axis of the foot and not to the median plane of the body.

Also, the terms “valgus” and “varus” are used to qualify some deformities of the hind foot. The “valgus” calcaneum relates to eversion of the subtalar joints and “varus” calcaneum to inversion, seen when the patient is standing. The deformity may just be postural but may also be caused by some deformity of the bone due to soft tissue imbalance during growth, as in club foot deformity.