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Technical note

Lower limb prosthetic weight limitation

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Introduction

In the litigious society in which we live, manufacturers have begun to place patient weight limits on their components in order that the prostheses are used safely to the limits of their testing. In order to guarantee the components, prostheses made with them can only be used up to the specified patient weight.

Some manufacturers also gauge the appropriate devices to be used by a combination of weight and the patients likely activity (for example the Otto Bock Classification Matrix). These activity levels are not clearly defined and merely use terms like 'lower activity', 'higher activity' and depend on the prescribing clinician deciding likely activity levels.

Technical details

The chart on the next page shows the current weight limitation as specified by some prominent manufacturers, although before use the current details should be checked with them.

It can be seen that for the larger individual over 148kg (320lb) there are no endo-skeletal components that the manufacturers recommend, and a limited range for those over 100kg (220lb) to 136kg (300lb) with only one having a limit of 148kg.

Manufacturers have recommended that conventional (exo-skeletal) prostheses (Hosmer, personal communication) could be used for patients in excess of 136kg (300lb). These will not have components specifically stressed to the excess weight but if the manufacturers fabricate the prosthesis knowing the weight and probable activity of the patient they are likely to assume liability for the resultant prosthesis.

One manufacturer (Hugh Steeper Limited, personal communication) suggest a limited life policy for the prosthesis being supplied to heavy patients with a planned replacement at predetermined intervals. The limb type should be partly determined by a conservative view of the likely activity of the patient with the limiting problem of definition of 'activity'.

Conclusion

The overweight patient presents a practical problem for the provision of a prosthesis. Manufacturers will only guarantee the integrity of a prosthesis up to a specific level of activity and weight of the patient. For the really overweight patient manufacturers may be willing to supply conventional prosthesis and assume the liability.

There may be a place for a predetermined limb replacement programme irrespective of component failure but gauged by the factors of weight and likely activity.

In all circumstances it is vital to seek advice from the component manufacturers when the prescription and manufacture of a prosthesis is considered for an overweight patient.

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ENDOSKELETAL MANUFACTURERS WEIGHT LIMITATION

	0 - 75kg (0 - 165lb)	75 - 100kg (165 - 220lb)	100-125kg (220 - 275lb)	125 - 136kg (275 - 300lb)	over 136kg (over 300lb)
BLATCHFORD					
Endolite	x	x	-	-	-
VESSA					
Quantum	x	x	-	-	-
OTTO BLOCK					
Modular:					
Red	x	-	-	-	-
Yellow	x	x	-	-	-
Green	x	x	x *(4 bar knee 3R23/3R21/3R55 - to 100kg (220lb)).	-	-
USMC					
Energiser:					
4 knee grades	x	x	x	x	-
Small 4 bar	x to 60kg (130lb)	-	-	-	-
TEH LIN					
Adult	-	x	-	-	-
Child	x to 55kg (12lb) (active children to 40kg (88lb)).	-	-	-	-
HOSMER					
Components:					
Star Tube	x	x	x	x	-
Feet:					
WALK	x	x	x	x	-
SAFK	x	x	x	x	-
CENTURY XXII INNOVATIONS INC.					
Total Knee:					
Paediatric	x to 45kg (99lb)	-	-	-	-
Adult	x	x	x	-	-
SEATTLE					
Feet:					
Light Foot	x	x	x	x	-
Men's	x	x	x	x	*
CARBON COPY II					
Feet:					
Light	x	x	x to 113kg (250lb)	-	-
Men / Women	x	x	x	x	*
SPRINGLITE					
Feet	x	x	x to 120kg (264lb) (special order above this depends on activity e.g. 'gold' for athletes.	-	-
KINGSLEY					
Feet:					
Steplite	x	x	x to 117kg (260lb)	-	-
FLEX FOOT INC.					
Feet	x	x	x	x	x to 148kg (320lb)

IN ALL CIRCUMSTANCES CHECK CURRENT MANUFACTURERS SPECIFICATIONS

x Suitable for use *** See manufacturer's chart** **- Not suitable for use**