

## CORRECTIVE BRACES FOR GENU VALGUM AND GENU VARUM

By M. J. TROSCLAIR

Supervisor, Orthopedic Appliances, University of Texas, Medical Branch, Galveston, Texas

Corrective braces for genu valgum and genu varus have been problems of the medical profession and the orthotist for many years.

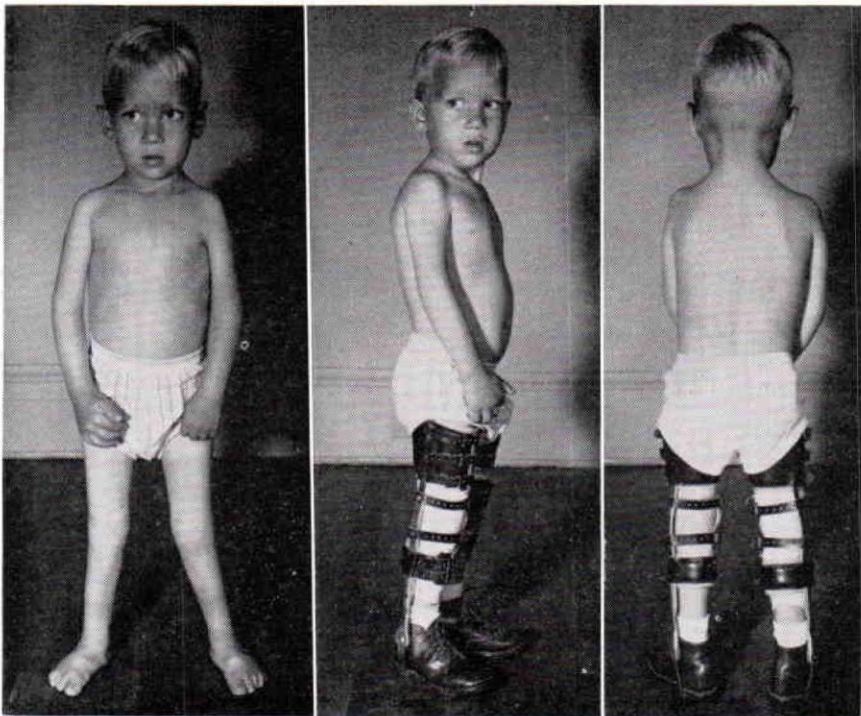
It is generally felt that braces serve better as holding devices than as corrective appliances. Corrective pressure over a long period of time is required to have any effect upon deformities. This pressure to be effective must be moderately severe and constant, therefore, making the appliance uncomfortable and difficult to tolerate.

There are in use today various types of corrective leg braces, but practically all types utilize the same basic three-point principle. Many orthotists feel that both lateral and medial uprights are necessary, while others like the single upright only. We at the University of Texas Medical Branch do not claim to have anything basically new, or by any means a cure-all for these types of deformities but have submitted these pictures of one of our patients wearing bilateral single upright bowleg braces which have to date accomplished a considerable degree of correction.

A description of the appliance follows:

1. The patient is measured much the same as for any leg brace, a draft of extremity noting circumference and width at all pertinent points is desirable.

2. A 24 s. t. aluminum bar  $\frac{5}{8}$ " x  $\frac{3}{16}$ " is shaped to follow the contour of the leg allowing  $\frac{1}{4}$  inch extra space at knee. This material size varies with each case.



3. An ankle joint of the orthotist's preference is then attached (the pope free motion ankle joint was used in above illustration) and then the half stirrup is fabricated and attached to the shoe.

4. A solid one piece thigh cuff is then fashioned from 24 s. t. .090.

5. Next, two straps at least 8 inches long are riveted to the upright above and below the position of the knee to be buckled to the contoured medial knee cup which is the adjustable pressure component of the entire brace.

6. The brace is then fitted with the leather cuffs and covered on the outside for protection of clothes and to improve appearance.

This brace utilizes the basic three point pressure principle but in such a way that pressure is present at some of the most permissible places. These are: at the thigh from below greater trochanter to just above the knee; at the lateral portion of calf (pressure on above patient was not enough to place excessive pressure on the peroneal nerve); at the ankle (where some patients will require a pressure button); and last on the medial condyles of the knee where we do not have nerve or blood supply of superficial position.

The above material was in reference to a genu valgum deformity but can be used almost as well on genu varum by changing to a medial upright.

As we have stated we do not claim to have anything basically new or the ideal brace and will appreciate hearing from anyone who has a better method for bracing these patients in this age group.

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“PROGRESSIVE EXERCISE THERAPY IN REHABILITATION AND PHYSICAL EDUCATION” by John H. C. Colson, published by The Williams & Wilkins Co., Baltimore, Md., 1958, 184 pp., \$4.50.

Reviewed by William A. Tosberg, C. P. & O.

This book discusses progressive exercises and is an excellent textbook for corrective therapists and others who are primarily engaged in physical education. It not only has a well written and well organized text but it is illustrated with stick diagrams which makes it easy to understand and easy to follow.

As the title indicates, these exercises are progressive and describe dynamic exercises, static exercises, and also mobilizing and strengthening exercises. Exercises for the head, the neck, trunk, shoulder-girdle, as well as upper and lower extremities are explained and illustrated.

Part II describes specific exercise therapy following a number of surgical procedures and Part III is written for general exercise therapy.

Although this book is not of direct application to the work of prosthetists and orthotists, it is of general interest since we all know that a well conditioned body is one of the prerequisites for the effective use of braces and prostheses. We are aware of the fact that the need for knowledge is rapidly increasing in the field of our choosing. It is not enough that we are familiar with techniques applying directly to our craft. We have learned that we have to be familiar also with fundamentals of anatomy, physiology, kinesiology, engineering, psychology, and many other fields. Being aware of the need and benefits, as well as the techniques of progressive exercises might very well be helpful in extending the scope of our knowledge.