

A Device for Tracing Contour of Amputation Stumps and Extremities: The Contour-Tracer*

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There is a definite need to determine the exact size and shape of a stump or extremity in order to ascertain quickly any changes in contour and size, and at the same time to have tracings of the periodic reevaluations.

A number of methods are presently used, such as the water displacement method, measuring the circumference of the stump or extremity at a number of points, and photography. None of these methods gives a simple rapid objective evaluation of the exact size and contour of the stump or extremity. In amputees it is extremely important to know when shrinkage and shaping have been fully accomplished so that the stump can be measured, a proper fitting prosthesis fabricated, and gait-training instituted.

With the contour-tracer, described in this article, which we have used for many years, the exact size and shape of the stump or extremity can be readily secured by means of a simple tracing, which can be periodically repeated for permanent record purposes in order to evaluate objectively any changes.

The contour-tracer consists of a right-angle device made of plastic or wood, into which has been inserted at the proper angle a ball-point or similar

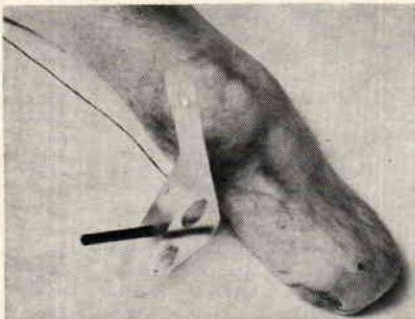


FIG. 1—Contour of below-knee amputation stump being outlined with the Contour-Tracer; anteroposterior aspect.

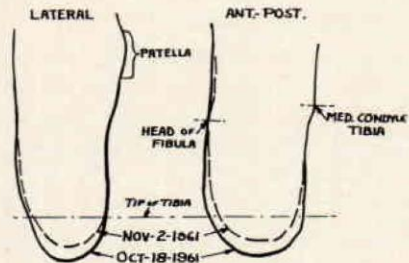


FIG. 2—Tracings of right below-knee amputation stump; both lateral and anteroposterior aspects made at two different times. Note markings of bony landmarks.

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type pen. The pen is activated by a small coiled spring in order to produce uniform pressure on the paper when tracing.

The same tracer can be used to outline a limb to secure a pattern for a brace, splint, or other assistive device.

Procedure

To secure the anteroposterior tracing of the extremity or stump, have the patient lying on the table in a supine position. For the lateral tracing of the stump, have the patient lying on the side from which the tracing is to be made. A hard surface of wood, plastic, or similar material is placed under the extremity or stump. A sheet of paper upon which the tracing is to be made is placed between the stump and the board. The skin is powdered so that the tracer can glide easily and smoothly over the skin. Figure 1 shows the contour of the below-knee amputation stump being traced with the contour-tracer in the anteroposterior aspect.

Gently glide the contour-tracer around the periphery of the stump or extremity with only slight contact with the skin. As the tracer is moved along, an outline will be made on the paper of the exact size and contour of the part. Repeated evaluations are made on the same sheet of paper, thereby indicating any changes. Landmarks, such as bony prominences, scars, or other skin blemishes, are indicated on the tracings so that the repeated tracings can be superimposed on each other. Figure 2 shows tracings of a below-knee amputation stump made with the contour-tracer on two different dates, showing both the lateral and antero-posterior outlines.

This same device can be used in tracing an entire extremity to determine and record the degree and changes in edema, muscle atrophy, contractures and deformities. It is also used to outline an extremity prior to fabricating a brace or other assistive device.

A method was described by the author¹ years ago for tracing the exact size and shape of surface lesions such as decubitus ulcers, varicose ulcers, wounds and other skin lesions.

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Reference

1. Newman, L. B.: Tracing Device for Surface Lesions. *Arch. Phys. Med.* 29: 42-43 (Jan.) 1948.