

# Comments on the Article “Grip Strength Measurement for Outcome Assessment in Common Hand Surgeries”: To the Editor

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## To the Editor:

Jamar Dynamometer: Whence Cometh Thou?

We read with interest the recent article, “Grip Strength Measurement for Outcome Assessment in Common Hand Surgeries,” by Lee and Gong.<sup>1)</sup> They discussed the different dynamometers in use, including the Jamar dynamometer. Their article prompted a look at the origin of the Jamar dynamometer. The Jamar dynamometer is a near-ubiquitous piece of equipment found in the offices of hand surgeons throughout the world, used routinely for hand examinations. Those who use the Jamar dynamometer are not likely to know its origins. Here we provide some information, which we hope the readers of the *Clinics in Orthopedic Surgery* find interesting.

According to the senior author of this letter (CL), Charles O. Bechtol, MD, an orthopedic surgeon in California, USA, engaged Hyman Jampol, a physical therapist, with developing an instrument for measuring grip strength in the late 1940s or early 1950s. Mr. Jampol enlisted the aid of Morris Asimow, a professor of engineering at University of California, LA, and Robert Reiss, a machinist in a prosthetics research laboratory. The name Jamar comes from the names of the three principal developers—Henry Jampol (JAM), Morris Asimow (A), and Robert Reiss (R); (The above information is based on an interview the senior author conducted with Hyman Jampol shortly before Mr. Jampol died). The first publication that we can find which describes grip strength assessment using a Jamar dynamometer is a 1953 report by Bechtol<sup>2)</sup> with a photograph of a device, which looks quite like a modern-day Jamar dynamometer—same grip, similar 5 handle spacings. The only difference is that the gauge is 90° to the examinee, whereas in a modern dynamometer, the gauge faces the examiner directly (180° to the subject). The device is identified as Jamar dynamometer, made by

the Jamar Company, Los Angeles.

In 1954, Bechtol<sup>3)</sup> again reported on grip strength assessment and used the same photograph from his 1953 report. This time, the device is simply identified as a “hydraulic dynamometer.” Bechtol noted that the dynamometer could be used to detect submaximal effort. This was reportedly one of the motivating factors in the development of the dynamometer (J. Stuart Gaul, MD, American Society of Surgery of the Hand, Correspondence Newsletter 1996-138).

The paper, published in the *Journal of Bone and Joint Surgery* in 1954, American edition, had been presented earlier that year at the ninth annual meeting of the American Society for Surgery of the Hand where Daniel Riordan, MD, a future president of the American Society for Surgery of the Hand, was reported as saying “I would like to congratulate Dr. Bechtol on his thoroughness. I know he has been developing this gadget for a long time and he has worked it into very fine shape.”<sup>3)</sup> Indeed, it has changed very little since then. It remains the most widely reported instrument used to assess grip strength.<sup>4)</sup> We can find no earlier references to or pictures of the device, which is in standard use almost 70 years since it was first introduced.

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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