

Chapter 2

A Brief History of Prosthetics and Orthotics of the Lower Body and Their Types

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ABSTRACT

Prosthetics and orthotics are items taken for granted in today's day and age. However, this has not always been the case. The history of these everyday items is long and very colorful. In this chapter, the authors shed light on the history and development of prosthetics and orthotics of the lower body in order to better understand the current state of the art in the fields. A historical perspective is provided followed by enumeration of the types of devices and techniques available without going into the form and function of individual products.

INTRODUCTION

With advances in science and technology, the efforts to replicate nature's work have been bolstered over the years. There are numerous techniques and technologies available today. The replacement of ailing organs and lost limbs is now a reality. Prosthetics and orthotics are today playing an important

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and ever more effective role in improving the quality of life of people who otherwise would not have been able to lead a normal, healthy life.

The words prosthetics and orthotics bring to the mind visualizations of plastic legs and arms without any form of articulation. Some even think of the wooden stump which would be used by seafarers as prosthetic legs and the hooks used in place of lost arms. While the history of prosthetics does include these, today prosthetics could not be further from these popular images. This is a growing field, with new developments and advances being made almost every day.

Advances in the fields of medicine and engineering have today given the world a new breed of prosthetics and orthotics which not just look and feel like the physiological part but also resemble them strongly in function.

This chapter is aimed at providing coverage of the history and current state of the art in the fields of prosthetics and orthotics. Starting from the mechanics of the physiological parts, performances of various prosthetics are discussed.

PROSTHETICS

Historical Perspective

An effective prosthesis delivers renewed functionality and is cosmetically pleasing, but it also serves to complete the wearer's sense of wholeness. A prosthesis then, is as much medical device as it is an emotional comfort, and so the history of prosthetics is not only a scientific history, but the story of human beings since the dawn of civilization who by birth, wound, or accident were left with something missing.

The evolution of prosthetics is a long and storied history, from its primitive beginnings to its sophisticated present, to the exciting visions of the future. As in the development of any other field, some ideas and inventions have worked and been expanded upon, such as the fixed-position foot, while others have fallen by the wayside or become obsolete, such as the use of iron in a prosthesis. The long and winding road to today's technology began about 1500 B.C. and has been evolving ever since. There have been many refinements to the first peg legs and hand hooks that have led to the highly individualized fitting and casting of today's devices.

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