

# **The prostheses for sports: the experience of INAIL Centro Protesi**

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## **Abstract**

A description of the activity of the “Centro Protesi INAIL” in design and application of prosthetic devices for sports.

Devices tests in applications for paralympic athletes

Test results

## **Introduction**

Centro Protesi INAIL” is one of most important prosthetic centers in Europe.

One of the main activities of the Research Division is the design of different prosthetic limbs for a variety of sports and recreation activities.

## **Text**

The development of effective prosthetic devices for use in sport engages a number of scientific disciplines, including kinesiology, bio-mechanical engineering, structural engineering (design and construction principles), materials science and fabrication technologies (metals and composites materials), as well as concepts of athletic training.

Once operative, a prosthetic used in sport will involve the ongoing support of experts from sports medicine, orthopedic medicine, physical therapy and athletic training.

The Research division of “Centro Protesi” developed in last years a lot of prosthetic devices for sport activities, like:

- running (sprint and middle distance)
- long jump
- swim
- ski
- cyclism
- rowing
- and many others..

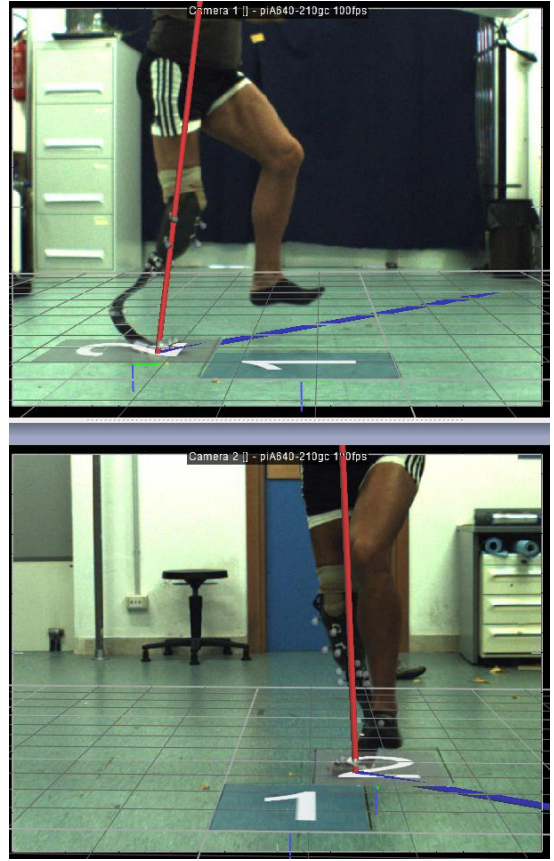
and we tested our solutions internally, on the patients of the Center.

## **Methods:**

- The prosthetic design methods (socket, modular components, artificial joints etc.).
- Construction of prosthesis
- Test on the patients

## **Results**

Evaluations of the "on the patient" tests results, finalized to the improvement of the prosthetic devices for sports



Biomechanicals analysis on the athlete



Test on the patient

## **Conclusion**

The prosthesis designed and made by Centro Protesi INAIL have been tested and evaluated by a heterogeneous group of amputee patients.

From paralympic athletes to a common activity level amputees, in each case we had good results in terms of performance, but specially our main goal is the reintegration of the patient in everyday life.

## **References**

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