

# Questionnaire

## Extra-Ambulatory Protheses

The following analysis and comments were drawn from responses to a recent questionnaire on extra-ambulatory protheses. The article, "Extra-Ambulatory Activities and Amputee," by Drew A. Hittenberger, CP, appeared in the Autumn, 1982 issue of *C.P.O.* (Vol. 6, No. 4).

As of January 25, 1983, five responses had been received to the questionnaire on extra-ambulatory protheses. This is a very low response and of course no valid conclusions can be drawn from it.

In response to question number one, "How many extra-ambulatory protheses have you made?" four responses said six-15 and one said 16-25.

On question number two, "What percent of your patients are involved in some form of physical exercise?" the average response was nine percent with a high of 20%, a low of five percent and one who said he had never thought to ask.

When asked, "What percent of your patients ask you about extra-ambulatory prosthetics?" the average response was 11% with a low of two percent and a high of 25%.

The respondees were asked to list, in order of occurrence, extra-ambulatory activities in which their patients participate. There were four mentions of swimming, although one was not the first activity listed; there was also one mention of scuba diving. Snow skiing was mentioned three times and water skiing once. Running and racquetball (a running sport) were both mentioned once, as were hunting, fishing, weight-lifting, and horseback riding.

The respondees were asked what percentage of patients used their prothesis for more than just daily activities and the average response was seven percent, with a high of ten percent, a low of five percent, and one who didn't know.

As to how many of their patients had one prothesis for daily activities and one for extra-ambulatory activities, the respondees on the average said four percent, with a low of one percent, to a high of ten percent.

All the respondents said that they informed their patients of handicapped sports organizations. One said he had a directory posted, and another said that there were no such organizations in his area.

Three of the respondents said that they were not satisfied with the level of prosthetics and its role in extra-ambulatory activities. One said yes, and the fifth said yes, but with reservations.

Reasons given for amputees not being more involved were:

- lack of interest
- not involved before amputation
- non-positive social conditioning
- fear of injury
- ignorance
- embarrassment
- rejection
- poor post-operative management

All five said that they would like to attend a seminar on the topic. Several additional comments were received and are listed below. In addition, Carl A. Caspers, CPO, of Minneapolis, Minnesota took the time to write a long, thoughtful letter in response. Parts of it are quoted below.

Additional comments:

1. "Yes—we need better research on different designs of protheses for different functional activities."

2. "Technical reports detailing alignment and fabrication for these specialized devices [are needed]. I have had to research, design, and devise techniques to create extra-ambulatory protheses. Also pre-printed bulletins with photographs for the patients would offer greater understanding and perhaps desire for these devices."

Mr. Caspers writes, in part:

"This letter is in response to Drew Hittenberger's article on extra-ambulatory activities and the amputee in the Autumn issue of *Clinical Prosthetics & Orthotics—CPO*. I was very pleased to see this article covering this subject as this has been a sadly neglected area for a long time.

"Mr. Hittenberger brings up some very good questions regarding the rehabilitation team's capability of maximizing the patient's activity level and more importantly the resultant poor postoperative care and management of the amputee. The vast [majority] are suffering from diabetes or other vascular complications. Obviously, the level of activity and the requirements for these people are going to be considerably less strenuous than those of a younger amputee. I think the problem goes back one step further and does not start with the post-operative care but in the operative management of the amputee. To date, the physician's main concern has been with the medical needs of the patient at that time and very little thought is given to the patient's functional needs after amputation. Such things as myodesis procedures, tibia-fibula stabilization, and lengths of lever arms are all crucial in the long-range function of an amputee. . . .

"In the area of limitation, I think Mr. Hittenberger covered this very well. There is an economic limitation that needs to be covered here also. The rehabilitation team's knowledge of extra-ambulatory activities and its awareness of the many extra-ambulatory prosthetic devices is somewhat limited. This thereby creates an economic factor that many amputees are unable to deal with. As has been well documented in the field of prosthetics, there is a need for extra-ambulatory devices and these should

be considered in the total rehabilitation, physically, psychologically, and economically.

"In the areas of prosthetic design, I think there are a number of things to provide [the patient] the capability of participating competitively or recreationally in extra-ambulatory activities. A sound pain-free residual limb is essential for good function in these areas. A good understanding of bio-mechanics as applied to the amputee is essential for the prosthetist to provide a well designed prosthetic device . . .

"In this day and age we have available to us a very sophisticated armamentarium of component parts and space-age type materials that lend themselves extremely well to prosthetic device fabrication, particularly in the specialized limbs geared toward specific physical activities.

"In recent times there has been much use of things such as rotational absorbers, Greissinger feet, and multi-axis type ankle joint foot complexes. All of these types of items offer capability to the amputee but should not be applied in a general fashion. There are many activities where a rotator or multi-axis type foot complex is extremely detrimental to the functionality of an amputee. Any sport which requires rapid directional changes would be a good example where these items should not be used. A person making quick and rapid adjustments in dynamic balance

requires immediate response from the floor through floor reaction with his foot. This cannot be accomplished adequately with such items.

"In conclusion, I feel that extra-ambulatory activities of the amputee and the resultant prosthetic devices that may be required for his successful participation in these activities is a relatively untouched area. A great deal of input is needed, both from the amputees in this country and the individual prosthetic practitioner, along with the physician and rehabilitation team members. I, myself, have been an amputee for 23 years and have been involved in numerous competitive and recreational activities and sports. I have found there are many areas in which I can participate in a non-handicapped world, and can be very competitive either on a one to one basis or as a team member. I have found this to be extremely fulfilling for myself and feel this is one of the ultimate goals that any amputee would strive to achieve."

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As regards the question of torque absorbers and use of the more sophisticated ankle foot complexes, Mr. Caspers raises a very interesting question. Certainly many prosthetists hold decided views on the topic and it would be interesting to receive Letters to the Editor on the matter.

The Editor

### AAOP Photo-Slide Contest

#### PRIZES

1st: \$100; 2nd: \$75; 3rd: \$50; 4th: \$25

All Contestants will receive Honorable Mention in the *Almanac*.

#### CRITERIA

1. Must be a series of 15 or more slides dealing with either orthotics or prosthetics.
2. Slides must illustrate one of the following: a) Patient management, b) Fabrication techniques, c) Components as directly applicable to patients, OR d) Successful rehabilitation using orthoses or prostheses.
3. Professional-type quality, 35mm only, possessing: a) Sharp focus; b) Accurate exposure; c) Simple, non-distraction background (preferably a solid color extending from above the patient to the floor); d) Readable graphs and charts, as needed; e) Clean clothing on all subjects—use shorts, leotards, drapes or gowns.
4. Slides must be numbered and labeled. If script is required, it must accompany series.
5. All slides will be copywritten and become property of the Academy, for use in the AAOP slide library as a resource for the profession.
6. All patients depicted in slides must have signed releases.
7. Contest limited to Academicians, certified practitioners, and persons in ABC-certified firms and/or AOPA member firms.

#### JUDGING

A special committee of the AAOP Public Relations Committee will review all slides.

#### DEADLINE

June 15, 1983. Winners will be notified by July 15, 1983.

Send all entries to:  
AAOP Public Relations Committee  
4130 Highway 55  
Minneapolis, MN 55422