Newsletter

Prosthetics and Orthotics Clinic

Vol. 3, No. 4 / 1979 Winter (Issued Quarterly)

Building A Positive Self Image In Patients

"Poems are made by fools like me, but only God can make a tree."

Momentary reflection on this literary work brings into perspective the complex task of rebuilding the image of one who has lost a limb. It is a task which requires not merely the professional and technical abilities of the prosthetist, but also a personal concern for the self image of the patient.

Body image is the constantly changing mental picture one has of his individual, body appearance. It develops through reflected perceptions about one's body and sensations originating from internal and external stimuli as the individual adapts to a kaleidoscopic variety of living activities. All too frequently body image is overlooked in the rehabilitation plans for a patient with chronic disease, disability, or surgical intervention, because physical diagnosis and mechanical advances have become paramount in our fast-paced acute care settings. The concept is so basic, it is not hard to see why it is overlooked; yet, if one begins to examine the personal effect of alterations, such as mastectomy, amputation, colostomy or stroke, we can begin to identify with the grief, anxiety and fear accompanying the loss of a body part and the ensuing alteration in functional ability.

Research of Schilder and others has shown that since body image is primarily a psychological entity, alterations in it are extremely subjective experiences which vary in intensity, dependent on the unique characteristics of each individual, in three distinct categories. These sources of self image include:

1) Past experiences which are gradually built up through the years from physiologic, psychologic, and social components, organized and integrated by the central nervous system.
2) Social interactions which include the reaction of significant others and of society to the person's body, as well as his own interpretation of that reaction.
3) Current sensations, such as perceptions of physical appearance, alterations incurred, and images, attitudes and emotions regarding the body.

Because these components are subject to constant revision, the body image of any individual is constantly changing. Survival of a healthy self image is determined by the amount of flexibility available to adapt to new situations and one's ability to realize that the image he projects to others is the one others see.

The loss or absence of a limb, therefore, has varying consequences dependent on the individual and his stage in the life cycle. Studies have shown that an individual is capable of incorporating a firmly attached object, such as a prosthesis, cane, etc., into his self image. This seems to be particularly evident with congenitals fitted very early in life, before developing unilateral coordination and functional abilities. Of the acquired amputees, early fitting and functional use of the prosthesis also increases the chances of reconstructing a complete image of one's self. A juvenile amputee, up to 3 years old, is not able to consciously deal with "loss," and congenitals, up to 6 years old, generally do not perceive themselves as "different." Yet amputation in later years results in the patient undergoing the process of grief, which includes feelings ranging from denial, anger and hopelessness, to reorganization and adaptation.

Schilder places a positive emphasis on the necessity for communication of these feelings. He believes we constantly construct, dissolve, and reconstruct our own body image as well as the body images of others. He points out that the tendency to destroy a previous body image is essential to acceptance of a new, altered image.

This appears to be a critical area in successful care of any patient. Because most amputees and their families have limited, if any, exposure to others with similar

Prepared by the American Academy of Orthotists and Prosthetists, 1444 N St., N.W., Washington, D.C. 20005. Editor: H. Richard Lehneis, Ph.D., C.P.O.; Managing Editor and Design: Brian A. Mastro, B.A.; Editorial Board: Charles H. Epps, Jr., M.D.; William Susman, R.P.T.; Gary Fields, C.O. Second class postage paid at Washington, D.C. Subscriptions: Domestic, $8.00 per year; Foriegn, $9.00 per year. USPS 017-590

problems, their greatest fears are of the unknown. Will amputation ruin my personal life?, End my career?, Leave my child handicapped and dependent?. With little factual information in the areas of prosthetics and a body image distortion that has not been reconciled, the patient frequently arrives at the professional door seeking an opportunity to communicate his fears and frustrations to an individual who will, hopefully, aid in the design of a prosthesis and promise for the future. While personal style and approach vary with the needs of individual patients, certain factors should be considered in dealing with an amputee: personality type, expectations, stage of adjustment, support system, and medical conditions.

Recent amputees, for example, would benefit from an opportunity to see and touch a prosthesis, with a complete explanation of the stages of fitting and fabrication to limb completion. Be open and honest with patients, keeping in mind that cosmesis may be a priority for some while function and durability are essential for others. While no prosthesis will ever replicate human functioning, once you determine what a patient expects to achieve through prosthetic usage, you can then fulfill his needs and likewise increase his acceptance of an artificial limb.

Parents of a congenital amputee frequently need much more support than the child who can learn to lead a "normal" life if allowed to develop and achieve, unhampered by "concerned" adults who would treat him "special/different."

Meeting with another amputee who has mastered life with a prosthesis can have a very positive effect on the older child or adult who is attempting to re-adjust his self image. Family members or significant others should be encouraged to be present at such meetings, as the fear of new amputees is generally in direct proportion to the acceptance reaction of those whose opinion he values most. Seeing is believing!, and once normal functioning in everyday living is explained, there will be less chance of the amputee being treated as a "handicapped" individual, which he is not.

Lastly, bear in mind that you are a very important person in the eyes of your patient. This is because you are now the professional most heavily relied on for advice, support and adjustment in the initial period of building a new self image. So grin and bear those minor repairs, etc., keeping in mind that a well-worn prosthesis is your best measure of success. Function and form go hand-in-hand in establishing a sense of completeness in self image.

While you may not have the power of our creator, you can surely have a part in the final design of his creations.

References:

Fishman, Sidney, "Behavioral and Psychological Reactions of Juvenile Amputees." Reprinted from *Limb Development and Deformity: Problems of Evaluation and Rehabilitation*, Charles C. Thomas, Publisher, 400-407.

La Fleur, Jean and Novotny, Mary, "A Study of Human Figure Drawings by Amputee Children and Verbalization of their General Adjustment," Masters' thesis, De Paul University, 1978.

Schilder, Paul, *The Image and Appearance of the Human Body*, International Universities Press, Inc., New York, 1950.

Schilder, Paul "Symposium on the Concept of Body Image," Nursing Clinics of North America, VII (December, 1972).

Mary Point Novotny, RN., MS., Nurse-educator for health professionals; Consultant, University of Illinois at the Medical Center, Amputee Clinic, Chicago, Illinois; has lectured across the country on body image alterations and the role of professionals in assisting patients with adjustment.

Meetings and Seminars

January 30-February 3, 1980
AAOP Round Up Seminar, Newporter Inn, Newport Beach, California

April 10-15, 1980
Third International Congress on Physically Handicapped Individuals Who Use Assistive Devices." Hotel Galleria Plaza, Houston, Texas, USA

June 16-20, 1980
Interagency Conference on Rehabilitation Engineering, Sheraton Center, Toronto, Canada.

June 22-27, 1980
World Congress of Rehabilitation, International Winnipeg Convention Center, Winnipeg, Canada.

September 14-20, 1980
AOPA National Assembly, New Orleans Marriott, New Orleans, Louisiana.

September 28-October 4, 1980
Third World Congress (ISPO), Bologna, Italy.

A Solution For Split-Size Shoes

by

Eugenio Lamberty[1]
John Milani[2]

Despite the almost daily occurrence of new concepts and improvements in Orthotics, many problems remain to be solved. A significant number of these problems result from congenital factors or acquired diseases during childhood. The severely deformed leg and foot have been of major concern, particularly when the deformed foot

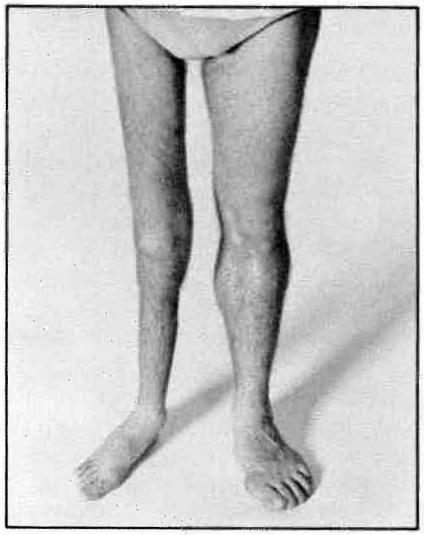

Figure 1.

has been significantly shorter in length than the sound foot (Figure 1).

In some cases the feet may vary in shoe size by as much as three or four sizes (Figure 2). This becomes quite expensive for the patient,

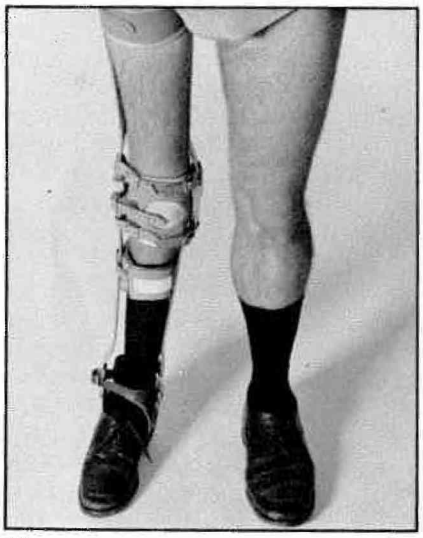

Figure 2.

who must either purchase two pairs of shoes to fit each foot properly or custom-made shoes. To reduce this financial burden and yet greatly improve cosmesis, a method of fabrication had to be found whereby the patient would be required to purchase only one pair of ordinary shoes that would be the size of the normal foot.

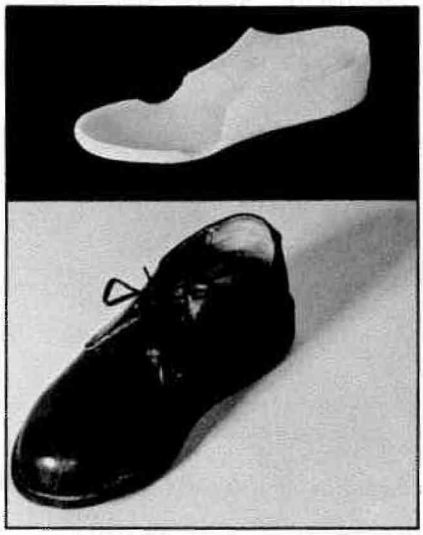

Figure 3.

A shoe filler (Figure 3), conceived, designed and developed by the authors through the Veterans Administration Prosthetics Center, has solved this problem. This device is placed in the shoe (Figure 4) to take up the excess space of the

Figure 4.

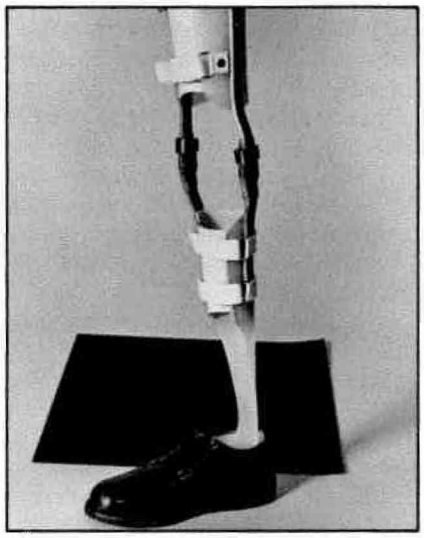

Figure 5.

shortened foot. Then the shoe insert portion of the orthosis is placed into the filler and shoe (Figure 5). This results in a highly cosmetic arrangement (Figure 6) that is also financially beneficial to the patient.

Figure 6.

Method of Fabrication

To construct the shoe filler, proceed as follows:

1) Secure a SACH foot that will fit the size shoe to be worn by the patient. Ensure that the plantar surface of the SACH foot is flat, to

prevent the shoe insert portion of the orthosis from rocking. An immediate post-op foot can be used.

2) Vacuum mold the SACH foot with ¼-inch low density polyethylene. Polyethylene is ideal since it provides good strength and flexibility.

3) When the plastic has cooled, remove it from the SACH foot and initially trim it so that it does not protrude beyond the borders of the shoe. Refer to Figure 3.

4) Use standard methods and techniques to fabricate the orthosis.

5) Place the orthosis on the patient. Then place the orthosis on the patient into the shoe and shoe filler while ensuring that the shoe filler does not hinder this process.

6) Further trim the shoe filler along its medial and lateral sides, behind what would normally be the metatarsal heads of the sound foot. This allows the normal toe break of the shoe to function properly and thereby ensure unrestricted motions of the ankle and foot.

Notes

To prevent the orthosis from slipping forward in the filler, the filler should curve around slightly, onto the dorsum of the foot. Refer to Figure 3. This trim, together with a properly laced shoe or a shoe laced with velcro straps, should provide the required counterforce to prevent the orthosis from slipping forward in the filler. It is further noted that one patient, who had worn the new orthotic system for one month, required foam padding that was placed anteriorly into the filler to prevent the orthosis from slipping.

Summary

The design and development of a shoe filler when bracing the shortened foot is cosmetically appealing and financially beneficial to the patient who is consequently required to purchase only a single pair of ordinary shoes. In addition, fabricating the filler is a relatively simple procedure for the orthotist.

Acknowledgements

The authors would like to express their appreciation to Max Nacht, Technical Writer-Editor, VAPC, for his cooperation and assistance in preparing this article; and to Charles Berman and Anthony Morales, Photographers, VAPC, for their fine photographic work.

Footnotes

[1]Orthotist, Veterans Administration Prosthetics Center, 252 Seventh Avenue, New York, NY 10001

[2]Orthotist-Prosthetist, Veterans Administration Prosthetics Center, 252 Seventh Avenue, New York, NY 10001

This article is reprinted with authors permission from the Feb. 1979 issue of "The Amp." Doctor Rubin discusses Phantom Limb Pain on a basic and objective level that is easily understandable, especially to the amputee.

Phantom Limb Pain

by

Gustav Rubin, M.D., FACS
V.A. Prosthetics Center

This column was prompted by a letter from John Riegel, N.S.O., of Cleveland, Ohio. Let me expand on some of the points he wanted discussed.

First: A definition of terms. *Phantom Sensation* is the feeling that the absent limb is still there but not necessarily painful. *Phantom pain* is the same feeling but the absent limb (or part of it) is painful. Almost every amputee experiences phantom sensation but statistically only five to ten percent have varying degrees of phantom pain.

Second: Some of my medical colleagues still think that this type of pain is imagined by the amputee. It is not. It is a very real pain and can sometimes be so severe and continuous as to be disabling. However, in the great majority of instances it is intermittent, although it may last for days (and nights) at a time.

Third: The cause and cure are unknown, just as the cause and cure of the common cold, and even cancer, are unknown. We have difficulty satisfactorily treating such ordinary conditions as chronic arthritis and severe flat feet, so the difficulty in adequately treating phantom limb pain should not be surprising.

Fourth: The Cause. There are many theories about the cause. None is completely explanatory. As a working basis, the theory most acceptable to me is based on the fact that there is an area in the central nervous system which is a sort of way-station for messages on the way to our consciousness where they can be interpreted, in this specific case, as pain. Signals can either go up from the absent limb, or down from the conscious part of the brain (cortex) and affect the way-station. Sometimes if an amputee talks about or thinks about phantom pain he will trigger an episode. The signals that go up can be described as either "excitatory" or "inhibitory." These terms require no explanation. The inhibitory effect is partly *maintained* by messages from the skin. If a leg is amputated then a large part of the inhibitory messages that would ordinarily come from the skin of that part will be absent. The excitation messages will dominate and pain could be experienced. A way of thinking about the effect of inhibitory messages from the skin could be exemplified by the instance of the person who bumps his shin and then *rubs the skin* over a broad area to relieve the pain. He sends skin inhibitory messages to the brain to relieve the pain.

Fifth: Treatments. Many different methods of treatment have been used. It is a simple fact that, when there are many ways to treat a condition, not one of them is much good. If there was one good way that would be the method used.

Treatments attempted have ranged from the use of a freezing spray, to injections of novocaine, either locally or into the lower spine, cutting the nerves to the stump, cutting the roots of the nerves near the spinal cord, cutting the nerve pathways in the spinal

cord itself, and even cutting out parts of the brain. Drugs, acupuncture, biofeedback, hypnosis, electrically stimulated implants around the nerve or in relation to the spinal cord; and even reamputation have been employed as methods of treatment.

The most recent, and, at this writing, the most popular approach has been the use of transcutaneous electrical nerve stimulation (TNS or TENS). In contrast to many of the other previously mentioned methods it is harmless to the amputee. It is not destructive. Sometimes wrapping the stump tightly with an Ace bandage or percussing the stump will help. Putting the leg back on will often help. As one amputee said he wraps the stump and just "lies there and curses."

If the pain in unrelieved by simple, non-destructive, non-damaging techniques, the amputee should be referred to one of the highly specialized pain centers. There are now many of these throughout the country.

Editorial for AAOP Newsletter

The significance of the psychological aspects of prosthetic/orthotic restoration are well appreciated by most prosthetists/orthotists. Conversely, these underlying principles are not as completely understood as they might be. A major part of the problem is that the subject matter of psychology and its guiding principles are far less specific and concrete than the biomechanical principles which underlie the technical aspects of the prosthetic/orthotic field. For example, the optimal weight bearing areas on the above knee stump are far more precisely defined, measured and utilized than are such psychological mechanisms as hostility, rationalization, projection, compensation, etc.

Nonetheless, the psychological attributes of the patient exert a critical influence on the outcome of the prosthetic/orthotic restoration process. Whether the prosthetist/orthotist is comfortable in doing so or not, he must, to the best of his ability, assess the causes of unsuccessful or problem fittings be they rooted in the physical, mechanical, biological, or psychological realm.

Sidney Fishman

dependent upon (1) individual personality, (2) cultural background, (3) economic and vocational status, and (4) social class. In the overwhelming number of cases, the patient can be expected to respond in line with these aspects of his background.

If we consider rehabilitation associated with a serious physical disability as a response to a "crisis," the success of the rehabilitation process will depend upon the individual's motivation to "cope with" and "resolve the crisis" along the same lines that the treatment team considers desirable. Consequently, if an individual's social and cultural background permits him to withdraw from productive and competitive activity as a result of disability, his will to "overcome" is correspondingly dissipated. This observation may help explain why the utilization of prosthetic/orthotic devices is most common in the industrialized, competitive societies of Northern Europe and America where the ability to cope and produce is treasured and respected. In contrast, there are other cultures with fundamentally different and less demanding value systems for the handicapped, thereby placing a substantially lower significance on rehabilitation. Normally the culture in which an individual grows and is nourished sets the limits of acceptable behavioral responses to a given crisis. Within these limits the individual is free to pursue his unique, individual adaptation.

In the absence of the prosthetist/orthotist's opportunity to thoroughly study the dynamics of human behavior, articles such as that prepared by Ms. Novotny serve an important role in sensitizing the practitioner to the various psycho-social factors which so significantly influence the success or failure of his work. Certainly the self-image and its ramifications are dependent on the influences which have been described above.

"The more familiar the practitioner is with the fundamental principles of the psychology of patient adjustment, the more accurate will be his analysis and the solution of the problem."

Therefore the more familiar the practitioner is with the fundamental principles of the psychology of patient adjustment, the more accurate will be his analysis and solution of the problem.

It is clear that the reaction of each patient to the prosthetic/orthotic rehabilitation process is As such, it serves as a useful concept and tool in comprehending the adjustment of the prosthesis-orthosis wearer.

by
Sidney Fishman, Ph.D.
New York University

Letters to the Editor

Dear Editor:

The article "To Check Out Or Not To", is probably the most realistic problem facing the active clinician today.

The check out sheet in the hands of dominating paramedicals has created more ill feelings towards the practitioner than a practitioner's "bedside manner".

If there must be a check out, the prosthetist should be present. When the prosthetist becomes a true professional, not just verbal, then check out will be unnecessary!

A very well written article by Kurt Marschall.

Dr. Lawrence W. Friedman, "says it like it is", how true his words are, the improvement of the prosthetic art with practicability uppermost in mind, is a must.

Instead of the "nice guy", "he is near by", and "he has a coke and coffee machine" attitude, quality should determine the clinician.

Prosthetist must not become so obsessed with technology and science that we leave our patients feeling depersonalized and robbed of dignity.

Yours very truly,

Joseph H. Martino, C.P.
Treasurer-Manager

Course Notice
Myoelectric Control of Artificial Limbs

Dates: August 25-28, 1980

Location:
Head Hall, University of New Brunswick, Fredericton

Sponsored by:
Bio-Engineering Institute, U.N.B. and The War Amputations of Canada

Open to:
Physicians, certified Prosthetists and registered Occupational Therapists (or Physiotherapists working with upper-extremity amputees), both beginners and those experienced in myoelectric fittings. Registration is limited to 30 persons. If applications exceed that number, preference will be given to prosthetist/therapist teams from the same clinic.

Course Description:
These will be lectures, discussions, demonstrations and labs, with some separate sessions for beginners and advanced participants. For those experienced in the clinical application of myoelectric control the course will provide an opportunity to discuss fitting procedures, problems and case histories and a chance to share new ideas. Inexperienced participants will be taught the basic concepts of myoelectric control, fitting and training which will prepare them for clinical use of these systems.

Certification:
The corresponding course in 1979 was awarded 18.5 hours of credit in the American Academy of Orthotists and Prosthetists Continuing Education Program and it is anticipated that the 1980 course will receive a similar rating.

Fee:
$100.00. This includes instruction and a full set of course notes.

Registration Date:
Applicants are advised to register by March 31, 1980 in order to ensure a place. A $50.00 deposit is required at the time of registration. This will be refunded if there are no vacancies.

For additional information please write to:
Prof. R. N. Scott
Bio-Engineering Institute
University of New Brunswick
P.O.Box 4400
Fredericton, N.B. E3B 5A3