When patients have to make a choice about what the best prosthesis is for them, it can be almost like buying a car; there are so many options available. Should you get a sedan or a sports car? The standard package or deluxe options? One vehicle or more than one? Much of the decision-making for this kind of purchase is based on your needs, desires and finances.

People with limb loss need to consider their functional and aesthetic goals, their prosthetic needs and desires, and the expected cost, including how much insurance will cover. All of these concerns need to be reviewed and evaluated in detail with a prosthetist. With this information, you and your prosthetist can make the most educated decision about the most appropriate prosthesis for you.
Aside from cost, three areas of major concern to all individuals with limb loss who want a prosthesis are comfort, functionality and appearance. All three are important; however, without one, the other two will not follow. The comfort of a prosthesis is based on how well the prosthetic socket fits the patient’s residual limb. A prosthetic socket’s design is based on specific biomechanical principles that allow for the most efficient use of the patient’s muscular and bony anatomy. All of this must be balanced with the highest level of comfort. Regardless of the level of amputation, a prosthetic socket must be comfortable for the patient. Comfort should never be a limiting feature in the design of a prosthetic socket. Cost and insurance issues should never be a factor when the comfort level is being addressed. Without a high level of comfort in the prosthetic socket, function of the prosthesis will be significantly compromised, and your functional goals will be jeopardized.

Once a comfort level is achieved in the prosthetic socket, allowing you to use the anatomy of your residual limb to control the prosthesis, then and only then, function should be addressed. All individuals with limb loss will have their own goals for function. Whether you want to take a walk with grandchildren, play with friends, teach ballroom dancing, run a marathon or play a musical instrument, the prosthetist must completely understand your functional goals and desires to design and fabricate the most appropriate prosthesis. Since a wide variety of prosthetic components (knees, feet, hands, etc.) and materials are available, which offer a range of function, patients and the prosthetist must work as a team to decide which component or combination of components will provide the highest level of function for their needs.

Given the tremendous variations of health insurance coverage for prosthetics, people with limb loss need to know what prostheses are affordable under their insurance plans and how this may affect the decision-making in that regard. For example, some health insurance plans do not provide coverage for prosthetic components that use microprocessors, and some health plans will not pay for customized silicone skin covers. During the evaluation process with the prosthetist, patients must be educated about what prosthetic costs their insurance plan will cover, and if certain items are not covered, what the potential out-of-pocket cost will be. A complete understanding of the insurance policy coverage for prosthetics will help you determine many functional and cosmetic outcomes.

Only after achieving a high level of comfort and function with your prosthesis should the issue of aesthetics be addressed. The prosthetist must know what the patient’s aesthetic concerns are before starting fabrication of the prosthesis. This information allows the prosthetist to make a plan for custom modifications to achieve aesthetic goals. The discussion about the cosmetic covers available for your prosthesis should occur during the initial consultation with the prosthetist; however, the application of a cosmetic cover should be done after an acceptable functional outcome is achieved.

Everyone has a different perception about what is aesthetically important in cosmetic coverings for a prosthesis. Some patients choose to never have any type of cosmetic cover. They like the mechanical look of a prosthesis and want to show it off. Others may want to have some type of design on the prosthetic socket, which can be done during the lamination phase and fabrication of the socket. Some may want the most customized silicone skin covering that blends into their body and disappears like movie magic. Whatever aesthetic choice a patient makes is the right choice for him or her. The key to decision-making is having complete and up-to-date information on all options available.

The following case studies highlight the prosthetic decision-making process.

Case Studies
Case 1 involves a 10-year-old girl who was diagnosed with cancer of her lower leg. Limb salvage surgery was attempted but was unsuccessful. She was seen for a preoperative consultation with her parents for an above-knee amputation. Prior to her illness, she was an active girl. A primary concern of the parents was how the prosthesis was going to look, and whether it would look like her other leg. The family was provided with a vast education on the overall process of her prosthetic fitting, as well as a description of her potential
function and the options for a cosmetic cover. Despite the prosthethist’s emphasis on function and recovery from the amputation, the parents’ main concern continued to be appearance. Following the surgery, she was fitted with a temporary prosthesis with a foam cover. Upon delivery of her definitive prosthetic socket, she made the choice to have a silicone cover added to the shin portion of her prosthesis and keep the prosthetic socket and frame exposed with a colorful, fun design on it.

Case 2 involves a 31-year-old female below-knee amputee. Her amputation resulted from a tumor in her lower leg at the age of 18. During consultation, her focus was having a more cosmetic-looking prosthesis. She also said she was unable to find a prosthesis that allowed her to perform optimally as a ballroom dance instructor, participate in martial arts and be an active mom to her young children. Based on the functional evaluation of her needs and a review of her insurance coverage provisions, she and her prosthetist decided that she could obtain one prosthesis. Her prosthesis would be built for high activity with a custom foot, adjustable ankle and a foam cosmetic cover with stockings.

Although she had a strong desire to have a custom silicone cover for her prosthesis, the decision was based on all factors, including her activity level, her family lifestyle and insurance limitations. She also decided it was best not to have the skin cover for the prosthesis because it would limit her function in her very active lifestyle.

Case 3 involves a 72-year-old male who sustained amputations of both of his legs below the knee due to a systemic disease. Before the onset of this disease, he had no medical history of ill health. He was retired, but led a very active lifestyle with regular exercise and frequent traveling. His primary concern was comfort and function. During his initial evaluation, he expressed limited interest in a cosmetic cover or the aesthetics of the prosthesis. Although there were some initial difficulties in obtaining a comfortable prosthetic fit due to the length of his residual limbs and the irregularities in his skin condition, he was able to achieve a high level of comfort in his prosthesis, allowing for his return to a lifestyle of exercise and world travel. He has continued to “show the bones” (showing the prosthetic components), letting the world see him for who he is.

These three case studies illustrate the differences in decision-making regarding the function and aesthetics of prostheses. Each person with limb loss has his or her own needs, desires and goals. It is important for the patient and the prosthetist to recognize that having detailed and updated information on what is available prosthetically allows a person to make an informed decision. Whether the loss of a limb or limbs is due to trauma, congenital differences, cancer or other illness, comfort comes first and form does follow function.

Photos courtesy of A Step Ahead Prosthetics.

About the Authors
Erik Schaffer, CP, president of A Step Ahead Prosthetics, has been working in the prosthetics industry for over 22 years. Phil Kreuter, PT, owner of Mobility Physical Therapy, has been working with amputee patients for over 25 years. With the assistance of his entire team, Erik Schaffer has contributed several articles to Amputee Coalition of America publications.