

Focus on Capabilities Not Disabilities— Sports and Recreation for the Visually Impaired Service Member and Veteran

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Because most activities of daily living are visually guided, effective visual rehabilitation strategies require the use of a variety of adaptive techniques and technologies that take full advantage of the individual's capabilities. This is especially true of service members and veterans who, because of their injuries, would like to continue to participate in sports, recreational and athletic activities, and competitions.

Service members of the U.S. Armed Forces and veterans are affected by many visually disabling conditions, including combat eye injury, traumatic brain injury (TBI)-related visual dysfunction, and age-related eye diseases. Patients with significant losses of central vision, peripheral vision, or total blindness require rehabilitation to successfully function in their daily activities. Because most mobility and other activities of daily living (ADL) are visually guided, effective visual rehabilitation strategies require the use of a variety of adaptive techniques and technologies that take full advantage of the individual's capabilities.

Both the Department of Defense

(DoD) and the Department of Veterans Affairs (VA) serve the visually impaired, although since WWII, it has been the primary responsibility of the VA's Blind Rehabilitation Service to provide most of the rehabilitation services to active duty service members and veterans who are visually impaired. The current conflicts in Iraq and Afghanistan, coupled with the aging veteran population, have placed an increasing demand on both of these federal health care systems to

deliver a sufficiently coordinated and robust set of services. This has led to the establishment by Congress of the DoD/VA Vision Center of Excellence (VCE) (See "DoD/VA VCE"), to better enable effective visual rehabilitation of all of our wounded service members and heroes with disabilities.

SPORTS AND RECREATION

Participation in sports and recreation events and activities are important to the health and fitness of all persons.

The VHA's Specialty Care Services includes medical services with a wide range of subspecialties; emergent and urgent care and patient support services, such as nutrition; spiritual care and other specific-purpose programs, such as cancer registry and Centers of Excellence for multiple sclerosis, epilepsy, and Parkinson disease. The Office of Specialty Care Services brings you "Updates in Specialty Care," sharing the latest evidence-based approaches, each column featuring a different topic and providing updates on existing programs, and introducing new programs. Special thanks to Margaret (Maggi) Cary, MD, MBA, MPH, director of the VA's Physician Leadership Development Program, who coordinates and edits the column. Please send suggestions for future columns to margaret.cary@va.gov.



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DoD/VA VCE

The VCE is 1 of 4 congressionally-mandated Centers of Excellence within the DoD that is charged with improving the quality of care and recovery of our wounded warriors. The VCE was created by Congress (National Defense Authorization Act, 2008) to:

- Collaborate to the maximum extent practical with the VA institutions of higher learning and public and private entities on both the national and international level
- Address issues related to the prevention, diagnosis, mitigation, treatment, and rehabilitation of military personnel and veterans affected by eye trauma and assist those suffering from vision impairment associated with a TBI and posttraumatic visual syndrome
- Develop a defense and veterans eye injury and vision registry

The VCE mission has been established as follows: “To continuously improve the health and quality of life for members of the armed forces and veterans through advocacy and leadership in the development of initiatives focused on the prevention, diagnosis, mitigation, treatment, and rehabilitation of disorders of the visual system.”

However, service members and veterans with disabilities have an even greater need to participate in order to maximize their physical health and to assist their reintegration in social groups. Because of this, both the VA and the DoD support the active involvement of veterans and service members in athletics. In fact, the VA recently renewed its grant of \$7.5 million to the United States Olympic Committee (USOC) to support athletic competition and recreation for persons with disabilities and for the athlete who is blind or visually impaired.¹ The VA also conducts Summer and Winter “Sports Clinics” for veterans with disabilities, while the DoD promotes para-sports via its relationships with the U.S. Paralympics Committee at its Military Treatment Facilities and Warrior Transition Units.

COMPETITIVE SPORTS

The benefits of athletics are especially important for service members and veterans who have lost vision in active service, because many of these individuals have been recently involved in sports and competition. Their understandable desire to participate and compete is not only physically beneficial but offers them a critical affirmation of their recovery, enabling them to experience greater, more active involvement with their environment, a purposeful interaction with others, the opportunity to compete, and a greater sense of well-being and quality of life.²⁻⁵ (See “Blinded Athlete.”)

A wide variety of competitive sports are available to blind and visually impaired athletes, many of which are official USOC sports (Table 1). In addition, there are other popular sports for the blind athlete not

yet classified as Paralympics sports, such as archery, baseball, bowling, golf, sailing, shooting, and water skiing. As the “Para” in “Paralympics” implies, sports participation for persons with a disability traditionally had a much larger footprint for persons with paralysis and amputation injuries. In contrast, sports for persons with visual disabilities are a more recent addition to the competition, possibly accounting for only about half the number of para-events compared with those for disabled persons with normal sight.^{6,7} However, there is a second reason that athletics for the visually impaired lags behind other para-sports. Compared with other physical disabilities, visual disabilities are unique in their impact on the athlete, because they impair visually guided bodily movement, causing a physical limitation even when there is no physical impairment.^{8,9} Because of this, “blind” sports have a significant need for alternative rules, adaptive technology, and the engagement of trainers, mentors, and sighted guides.

One important issue in competitive sports for a person with vision impairment is the requirement for a classification system of prospective athletes. At present, visual classification is strictly by central visual acuity and peripheral visual field of view and much like the current clinical grading of visual disabilities, there is unevenness in how this translates to functional ability. This is partly due to the variable impact of visual acuity reductions vs field of vision losses; with each affecting visual function differently. Performance differences are also due to unevenness in residual functional visual capabilities compared with the measured depth of visual deficit.⁸ Table 2 lists the current classification system of blindness, legal blindness, and low vision used by the United States Association

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Blinded Athlete

This is the story of 27-year-old active duty U.S. Navy Lieutenant, Brad Snyder, who experienced serious facial blast wounds leaving him without sight. Undaunted by this life-changing event, he forged ahead in pursuit of excellence in athletics. His prior experience as a competitive swimmer has taken new form in his plan to get back into swimming, using adaptive technology to assist in his competitive swimming turns. His emphasis on athleticism as a blind person has extended to rock climbing, competing in 10K running events, and training for the 2012 Warrior Games. During his blind rehabilitation at the Tampa Polytrauma Rehabilitation Center, Tampa, Florida, the navy lieutenant worked with occupational therapists who were impressed with his determination to succeed and the positive impact of sports on his progress. Lieutenant Snyder recently completed a rehabilitation program at the VA Augusta Blind Rehabilitation Center in Augusta, Georgia.



Blinded U.S. Navy Lieutenant Brad Snyder (on right), training for the 2012 Warrior Games with his brother Russell Snyder.

IMAGE: U.S. NAVY PHOTO

of Blind Athletes (USABA) and the International Blind Sports Association (IBSA). These classifications are an attempt to categorize visual loss across all sports, but they provide no information about how the measured vision loss affects performance of the individual in each sport. Clearly, the impact of visual disabilities in sports participation is not linear and should not be applied uniformly to each Paralympics event. This issue has been addressed by Ponchilla in a proposed model (AccesSports Model) designed to adapt sports to the capabilities of the visually impaired in 3 areas: (1) targets/goals, (2) boundaries, and (3) rules.¹⁰ Presently, the IBSA is debating changes in the classification system that would place more importance on the functional capability of each athlete for each sport.

Another challenge in visually impaired competitive sports is that patients with vision impairment often have significant comorbidities requiring additional training and modification for the athlete to participate in an event. Comorbidities can include balance problems, limb amputations,

and paralyses due to stroke or brain injury. In order to overcome these issues, significant cross-training of providers is helpful, but certainly a team approach to rehabilitation is essential.

VCE SPORTS AND RECREATION

As part of a larger, multifaceted consensus conference held in August 2011, VCE expert focus groups addressed sports and recreation opportunities and challenges for blind and visually impaired veterans. Although the conference was given impetus by the visual problems experienced in our returning Operation Enduring Freedom/Operation Iraqi Freedom veterans, the conference outcomes were directed to the benefit of those veterans with visual impairment from any cause, including age-related diseases. The consensus process was designed to span all agencies delivering care, including the military services and VA, as well as to span the spectrum of providers, including occupational therapists, case managers, ophthalmologists, blind rehabilitation specialists, researchers, optometrists, and other individuals involved with

technology development. The process began with working group discussions with a panel of experts giving a status update in their areas of care, followed by consensus discussions, designed to identify current challenges, their potential solutions, and any research gaps that need to be addressed.

The sports and recreation consensus group identified 4 key challenges for competitive sports for a person with vision impairment. The first challenge was to define sports and recreation for a person with visual impairment. The various activities that can be considered a recreation or sport span a significant range of physical difficulty from activities such as fishing to Olympic and other elite athletics such as alpine skiing. Furthermore, the various communities that are working with visually impaired athletes each have their own lexicon of sports and associated impairments. It was recommended that, going forward, representatives of these groups endeavor to work more closely in delivering services and in developing more consistent and functionally usable terminology.

Second, for blind and visually impaired athletes, access to community athletic facilities and services is often limited. Locally, this is because there can be issues regarding consistent and reliable transportation, trained personnel to provide instruction, and the variability of accessible equipment. For athletes desiring to participate at a competitive level, access to the necessary services is often limited. There are simply not enough facilities, trained staff, and volunteers, and these are inadequately distributed nationally to serve this need. Organizations such as the USABA and the IBSA are working hard to expand their services for blind and visually impaired athletes, including the solicitation and training of volunteers to act as classifiers, trainers, and mentors to prospective athletes. USABA's Military Sports Program has been established, in collaboration with the DoD, to provide services to our service members with a vision impairment. However, access remains an issue due to limited classifiers, facilities, and service locations, especially in rural areas.

Third, adults wishing to participate in competitive sports while attending college or secondary education are frequently faced with a lack of mainstream physical education instructors who are trained to mentor them as an athlete with a vision impairment. The "mainstreaming" of para-sports, for visual impairments will likely take time to improve. This problem may have to do with the apparent "exceptionalism" of para-sports, making it difficult for educators and trainers to consider para-athletes in the same venue with the nondisabled. It is possible, however, that as the current conflicts wind down, the new generation of motivated veterans with a vision impairment will provide the impetus for a "new look" at this long-standing problem within the physical

Table 1. Comparison of currently available Paralympics sports to physically vs visually disabled athletes⁷

Sport	Blindness/ visual impairment	Amputation/ paralysis
Alpine skiing	√	√
Archery		√
Biathlon	√	√
Canoe		√
Cycling	√	√
Equestrian	√	√
Goalball	√	
Judo	√	
Nordic skiing	√	√
Power lifting		√
Rowing	√	√
Sailing	√	√
Shooting		√
Sitting volleyball		√
Sled hockey		√
Swimming	√	√
Table tennis		√
Track & field	√	√
Triathlon	√	√
Wheelchair basketball		√
Wheelchair curling		√
Wheelchair fencing		√
Wheelchair rugby		√
Wheelchair tennis		√

Adapted from listings on the U.S. Paralympics website.

Table 2. Visual classifications for blind and visually impaired athletes¹¹

IBSA Visual Classifications

Class B1 – No light perception in either eye up to light perception, but inability to recognize the shape of a hand at any distance or in any direction

Class B2 – From ability to recognize the shape of a hand up to visual acuity of 20/600 and/or a visual field of < 5° in the best eye with the best practical eye correction

Class B3 – From visual acuity above 20/600 and up to visual acuity of 20/200 and/or a visual field of < 20° and > 5° in the best eye with the best practical eye correction

USABA Recognized Low-Vision Classification

Class B4 – From visual acuity above 20/200 and up to visual acuity of 20/70 and a visual field larger than 20° in the best eye with the best practical eye correction

Adapted from classifications listed on the USABA website.

education community.

Finally, although blind athletes have competed in the Paralympics for a number of years, there are very few technologic advancements to modify sports equipment for blind or visually impaired athletes. The present modifications include auditory cues, sighted guide, enhanced visual markings, or alterations of the target. Because of the extreme variability of the visual capability of each individual, some events have been modified to accommodate the participants using blindfolds so all participants have the same visual acuity. Again, the work of the USABA and the IBSA to provide a more functional definition of visual impairment, in relationship to each sport, is an important step that will help in this area. Once the capabilities of each athlete for each sport are better understood, it will be much easier for the team of clinicians, therapists, and trainers to design and study the most appropriate visually adaptive approach to treatment and training.

Perhaps, the most important point is that those professionals who have found themselves supporting visu-

ally impaired athletes were typically not trained for that role. Neither were they trained to come together inter-actively in a multidisciplinary team to support a person with a vision impairment ambition to participate or compete in a particular sport. Solving this conundrum will take a paradigm shift involving all team members. The current situation, in which returning service members and veterans with vision loss desire a rapid engagement in competitive sports, adds priority to the issue and may help in stimulating the necessary change.

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