

THE SPORT WHEELCHAIR



Set-up &
Maintenance



FOREWORD

I've been with the American Association of adaptedSPORTS™ Programs since it was incorporated in 1996 and am proud to be a part of an organization that has become known as the United States' most innovative provider of interscholastic athletic programs for youth with physical disabilities or visual impairments.

Throughout my coaching career, I have had the privilege of working with many outstanding coaches and players. The ideas contained within the adaptedSPORTS™ Coaching Guides represent the cumulative experiences in an ever-growing body of knowledge that was in its infancy 10 years ago.

My ultimate goal with AAASP has always been to make sure that every child who wants to play adapted sports has a well-trained and knowledgeable coach who will help them develop into a well-rounded athlete. I am proud of what we are able to present within the adaptedSPORTS™ Coaching Guides, as well as our sports rule books and our professional coaches training program.

I hope you find our resources helpful in your quest to help these deserving young athletes.

Sincerely,

A handwritten signature in black ink that reads "Ron Lykins". The signature is written in a cursive, flowing style.

RON LYKINS
AAASP Director of Training
U.S.A. Paralympic Coach

Please go to www.adaptedsports.org or call 404 294 0070 to sign up for certification, schedule a workshop or order any of our publications.

The Sport Wheelchair: Set-up and Maintenance
By Ed Owen
First Edition

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The text of this book has been
excerpted from Ed Owen's
wheelchair basketball book material ©1997-2003.

ABOUT THE AUTHOR

Ed Owen's expertise in wheelchair basketball spans 44 years as an athlete and coach, and author. In addition to *The Sport Wheelchair: Set-up and Maintenance*, Ed wrote *Playing and Coaching Wheelchair Basketball* (University of Illinois Press), the definitive resource for coaching wheelchair basketball. Ed is currently updating the book to address new developments in the sport.

Ed is honored in the National Wheelchair Basketball Association Hall of Fame (NWBA), and named by the NWBA as the best wheelchair basketball player of all time. He has received the International Wheelchair Basketball Federation's Gold Medal Triad Award for his work worldwide—the first-ever awarded to a U.S. citizen. As a seven-time Paralympic athlete, Ed has won numerous gold medals in wheelchair basketball, as well medals in swimming, the pentathlon, and the discus. Ed has also served as coach for the International Wheelchair Basketball Federation's European Zone.

Ed joined AAASP in 2001, as Assistant State Coordinator for AAASP's adaptedSPORTS™ leagues in Georgia and Area Coordinator for Atlanta AAASP teams. His expertise and contributions continue to be a vital part of AAASP's statewide interscholastic sports operations, player recruitment, coaching standards, player development, and community education. Ed plays an essential role in developing and conducting AAASP's training programs for coaches and officials. His involvement includes coaching field-work to enhance the development of coaches and players during league seasons, and conducting coach and athlete workshops and clinics throughout the year.

THE SPORT WHEELCHAIR

When you set up your wheelchair for sport, you are really concerned with three related subjects: providing yourself with the most stable position for sitting and pushing while competing; allowing yourself to be as competitive as possible (maneuverability and speed); and matching your play to the needs of the team. A fourth concern is the safety of the wheelchair user.

ADJUSTING THE WHEELCHAIR

Most wheelchairs can be adjusted somewhat (in order to best fit the customer) and it is in the user's interest to set their wheelchair up so that they can maximize their ability to use the wheelchair while remaining safe in doing so. The more common elements that a young user is likely to adjust are (a) the placement of the rear wheels, (b) the overall width and camber of the rear wheels, and (c) the angle of the seat sling to the floor.

Length of the wheelchair's wheelbase

The distance between the points of floor contact of the front caster wheel and the rear wheel determines the turning radius of your wheelchair. A short wheelbase can make for faster turning and so is desirable for most wheelchair sports. But remember, when your rear wheels are moved forward, your wheelchair will tip over backwards easier.

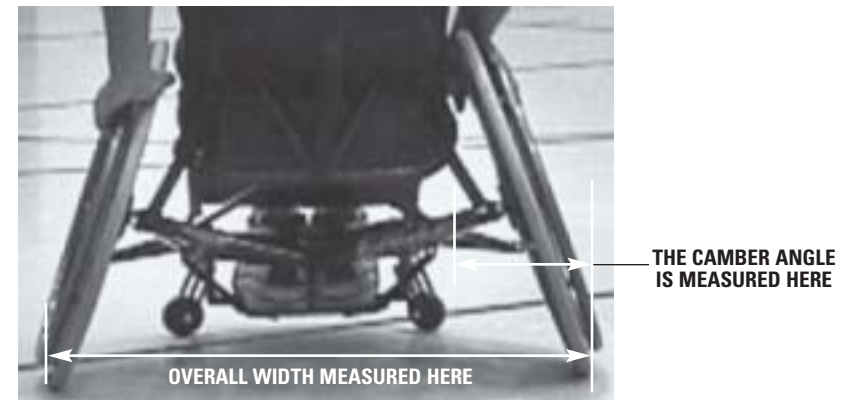
And when your front caster wheels are too far toward the back of the wheelchair, your wheelchair will tip forwards easily.

The more common elements that a young user is likely to adjust are (a) the placement of the rear wheels, (b) the overall width and camber of the rear wheels, and (c) the angle of the seat sling to the floor.



Overall width and camber of your rear wheels

The wider your wheelchair is, the easier it will turn. Increasing the overall width can be achieved by either moving the wheels away from the frame of the wheelchair or by increasing the negative camber of the rear wheels (thus increasing the distance between their points of contact with the floor). If your wheelchair turns too fast, it is possible that you will often lose your balance, thus causing other problems.



Angle of the seat sling to the floor

When the back part of the wheelchair seat upholstery is significantly lower than the front part, your upper body will be closer to the front part of your rear wheels (while your upper body remains relatively upright).

Angular adjustment of the caster and rear wheels

The front caster housing (that holds the caster fork & wheel) should be at right angles (90°) to the floor in both the side-to-side and forward-rearward directions.



SEAT DROPPED IN THE REAR

The rear wheels should be parallel to each other. Otherwise, your wheelchair will try to move unequally in different directions and your wheelchair's pushing co-efficient of friction will be significantly higher (making it harder to push).



Checking the 90° positioning of the caster housing

NOTE: Any adjustment that affects the front casters and/or the rear wheels can affect the rolling alignment of the wheelchair. So, in order to keep the rolling resistance at a minimum, the user should make any necessary adjustments to the rolling alignment after changing anything on the caster or wheel set-up.

FITTING THE USER TO A WHEELCHAIR AND THE ISSUE OF STABILITY

Working out the proper sitting position in your wheelchair can make all of the difference in the world in how you perform. You must have sitting stability: when you are pushing, turning, shooting; often while encountering “incidental contact.” That means that you must figure out *where* you want your body to stay, know why, and work on the means of achieving this goal. You also need to understand and use the best pushing techniques so as to be as fast as possible while staying under control, keeping as physically fresh as possible, and maintaining your physical balance.

The nature of the wheelchair and the laws of physics make it difficult to perfectly achieve both optimal sitting stability and superior wheelchair handling. Everything that you do to improve your mobility (turning, reaching, pushing speed, etc.) often means a sacrifice in your stability within your wheelchair. So the first thing you need to do is analyze your style of playing and decide which aspects of your playing style are the

most important. Then you will be in a position to intelligently choose when you are faced with making a compromise.

Within certain limits, the lower you sit in your wheelchair (and the closer to the wheels you are) the faster you will be. So first, you often have to decide how high you “must” be.

You must determine the angle (to the floor) that your wheelchair seat is set at. How tall you sit helps determine the frame angle. Modern sport wheelchairs are often custom made and it is possible (within certain limits for each manufacturer) to put your frame at an angle to the floor where you are automatically leaning forward some; enabling you to get more power into each push.

You should try to get the rear wheels as far forward as your balance will allow. In this way you have more of the rear wheel to push upon. Naturally, your wheelchair will tip over backward more easily. Moving the rear wheels forward also shortens the wheelchair's wheelbase thus making the wheelchair turn more easily.

You want to put enough camber into your rear wheels so your wheelchair doesn't tip sideward when you turn or when you are hit as you push. How much camber is best depends upon your body weight, your speed, and your playing tactics. Normally, the more camber in your wheels, the easier your wheelchair will turn.

Determining how far your footplates should be from your seat sling can also affect your balance (and can play a part in pressure sore prevention). If your footplates are too close to your seat, then your legs will tend to spread apart (and put more pressure upon your buttocks). If your footplates are too far from your seat sling, you will experience a lack of forward stability (and run the risk of pressure sores on the lower side of your thighs where the cushion ends).

Modern sport wheelchairs are often custom made and it is possible to put your frame at an angle to the floor where you are automatically leaning forward some; enabling you to get more power into each push.

In track it is recognized that the ideal positioning of the hands on the wheels, so as to maximize the application of power to the wheels, lies in spacing the upper part of the rear wheels at the same width as the person's shoulder width. The person's arms can then apply power directly downward, without the use of smaller muscle groups (needed when the arms are held an angle away from the body). This positioning makes sense for any wheelchair sports person so long as there is no other overriding sporting or stability reason for setting up the wheelchair in another way.

You should study your pushing technique to find out how far forward your upper body leans while you are pushing. Then try to maximize this leaning forward as long as your body stability allows. Note though that upper body movement is not desirable. Rather, you want to put your upper body into its best pushing position and then maintain that position.

The pushing movement itself should occur in your shoulders, arms, and hands. The laws of physics make this imperative!

Strapping of your feet, legs, or upper body (either together or to the frame of the wheelchair) to aid balance and to minimize the effects of spasms is a helpful strategy for some players. Also, see the section on Safety.

Your seat cushion: its type (stability), its thickness, and the slipperiness of its cover can all affect your sitting stability.

The friction of your clothes and the amount of friction of all surfaces that are touching you can affect your sitting stability.

You should study your pushing technique to find out how far forward your upper body leans while you are pushing. Then try to maximize this leaning forward as long as your body stability allows. Note though that upper body movement is not desirable. Rather, you want to put your upper body into its best pushing position and then maintain that position. The pushing movement itself should occur in your shoulders, arms, and hands. The laws of physics make this imperative!

FITTING THE WHEELCHAIR TO CHILDREN AND OTHERS WITH SPECIAL SIZING NEEDS

Smaller individuals (usually children) have some distinct needs when it comes to using a sport wheelchair. In order for these individuals, who often do not have adult strength, to be able to use a sport wheelchair effectively, their fit in the wheelchair must be more exact than is normally the case.

Setting the top of the wheelchair back at the proper height can be critical, too. The back must support the child so that growth does not lead to abnormal curvature of the spine. But too high a back can inhibit effective and rapid propulsion of the wheelchair.

Extreme camber of the rear wheels can make it very difficult for a person with short arms to dribble a ball on the side of the wheelchair where it should be (in order to protect the ball from an opponent).

Setting the top of the wheelchair back at the proper height can be critical, too. The back must support the child so that growth does not lead to

abnormal curvature of the spine. But too high a back can inhibit effective and rapid propulsion of the wheelchair. If the individual has a separate sport wheelchair, then the back height might be a bit lower than if the wheelchair must also be used for everyday life.

Many wheelchair-governing organizations have enacted rules limiting the height of the foremost part of the wheelchair from the floor (generally 5" in the U.S.). Usually this is the footrest. This is done to prevent injuries to an opponent's feet being inflicted by a footrest running into the feet or legs. Most children, on the other hand, have short legs and naturally high footrests. In an effort to lower the footrests to meet the rules, many children end up with their upper thighs at an angle that is less than parallel to the ground. This has two ramifications: there is more pressure on the bottom side of the legs where the thigh meets the front edge of the seat (cutting off blood flow) and a ball, when placed on the lap, will immediately roll off the player's lap. The solution is to raise the feet higher by either mounting a second, higher footrest that is slightly behind the lower footrest (that makes first contact in a collision) or placing something thick (usually temporary) that the feet can sit upon (like Styrofoam™ or a rolled-up towel).

MAINTENANCE OF THE SPORT WHEELCHAIR

If you want to be able to play to the best of your ability you have to keep your wheelchair in good playing condition. Regular maintenance also helps prevent the wheelchair from undergoing unnecessary stress. My discussion of wheelchair maintenance is designed for those players who, like myself, believe in taking care of their own wheelchairs.

THE WHEELS

Spokes

Spokes should be checked weekly at least, but if you are playing a lot of tough physical games or practices, you should check your spokes after every game or practice. The spokes keep the wheels round and prevent them from becoming warped and ruined. A wheel can become warped from side to side or out of round (into a noncircular form) by the weight of the wheelchair user, by torque as the wheelchair is maneuvered quickly, or by contact with another object (another wheelchair, usually). Spokes that are too loose are the major contributing factor to a warped wheel, although hard enough contact can certainly warp the wheel.

To check the wheel, you should not be sitting in the wheelchair. By getting out of your wheelchair, you eliminate the tension your body weight

puts on the spokes. Use your fingers to feel or "pluck" each spoke, then compare the sound or feel of each spoke to the other spokes. The spokes should have a little give, but not a lot. To loosen the spokes, you turn the spoke wrench counterclockwise while the spoke and nipple on which you are working are farthest from the floor. To replace a spoke, you completely loosen and remove the nipple, then remove that spoke (or the



TYPICAL CROSSPOKE WHEEL

nipple if it is broken) from the hub of the wheel. You then replace the spoke. I find it easier to replace any spokes that insert into the hub, outside to inside, first because these have to fit around other spokes already in the wheel and often have to be bent to get into position.

Spokes that insert into the hub inside to outside, are always easier to fit into the wheel and should be inserted last. Once the spokes are all in and tightened, you may find that a few have the spoke sticking up through the nipple a bit (on a single wall rim), so that they would puncture the inner-tube if it were inflated.

SPOKE STICKING UP THROUGH THE NIPPLE AND THE RIM



If too many spokes are protruding from their nipples, you should double check to see if the spokes are equally tightened, laced properly (placed in the wheel in the proper sequence), and are the right spokes for that wheel (length and thickness). Any of these could cause an undue number of spokes to protrude thru their nipples. If you have had to replace several spokes and have loosened six or more, you should loosen all of the spokes, then retighten them so that they are all tightened equally. You should partially and equally tighten all of the spokes, then reverse direction and finish tightening the spokes. When just tightening the spokes (if you are retightening the whole wheel), I find it easier to use a screwdriver until the spoke comes up through the nipple far enough to eliminate the grip of the screwdriver. As you tighten the spokes, you should regularly rotate the wheel to make sure that you are eliminating any warp (from side to side) in the wheel. If the wheel has a warp in one area, as you get to the final round of spoke tightening, you should tighten the spokes in the warped area on only one side (leaving the spokes on the other side as they are), so that they will pull the wheel into a straight line.

NOTE: Vibration is a major problem for wheels because it serves to loosen the spokes. Vibration from the car is a major cause of loose spokes. So, even if your sport wheelchair just sits in the car while you use an everyday wheelchair, the wheels of your sport wheelchair are being “worked” some by the vibration inherent in a moving auto.

If you are lucky, you may have a bicycle or wheelchair repair shop nearby that will let you use a truing machine.

A new wheel must also be taken care of from the start. When the wheel is first used, the components of the wheel are pushed and pulled on as the forces on the hub try to balance out. But no wheel, whether hand or machine made, is perfectly made. So, as the wheel is first used some of the spokes will become a little looser than the others. As the wheel turns the spokes on the top half will be stretched while the spokes on the lower half of the wheel will be bent as the hub and rim push and pull on the spokes, thus keeping the stresses on the wheel in balance. This stretching and bending on the spokes shortens the life of the spokes. It also leads to a surprising condition: after a week or two the spokes will all seem to be equally tight-

ened! But in reality all of the spokes are a little stressed and the nipples are a little loose in the rim. So you should tighten the slightly loosened spokes within the first week of use. This will help keep the forces equal throughout the wheel and extend the life of the spokes.

Bearings

There are sealed bearings in both the large wheels and the front casters on sport wheelchairs. These should be checked, and cleaned if necessary, every three or four weeks. Dirt and hair collects here, specially the bearings closest to the ground, and can quickly work their way past the plastic seal on the bearings and wear out the bearings. Note that oil or grease used around these bearings attract and hold a lot of dirt and hair. Also you should check the rear wheels for wear and replace them when too much play develops between the inner and outer sections (“races”) of the bearing. With the

rear wheels negatively cambered, the bearings on each of the large wheels, nearest the frame, wear out quicker than do the outside bearings. Sometimes you may have to change only the bearings on the inside of the hub. The use of one-piece hubs with pressed-in, sealed bearings and an internal spacer helps reduce this problem.

Adjusting the Tightness of the Large Wheels and Front Casters

You should check and adjust the tightness of all wheels weekly. The front caster fork stem bolt should be tightened enough that there is no play (sideways or up/down movement) when the player attempts to move the fork back and forth. Over-tightening the fork stem bolt, though, will lead to (a) the caster not swiveling freely and (b) undue bearing wear since the inner races of the two caster fork bearings will be pulled out-of-alignment, toward the middle of the caster housing.

Adjusting the tightness of the large wheels is done by tightening or loosening the nut on the end of the quick release axle. Most players want the wheel to be tight enough to prevent the wheel from wobbling, yet loose enough to allow the wheel to be easily removed from the axle housing.



Adjusting the Length of a Quick Release Axle

To adjust the tightness of the large wheel, you should get the wheel off the ground, either by turning the wheelchair upside down or by putting the wheelchair on a set of blocks so that the wheels do not touch the ground. Most quick release axles need a 3/4" wrench to loosen the nut and either a 1/2" (when used to hold the ball bearings) or a 7/16" wrench (when the end of the axle has flats ground into the end).

Tires

Pneumatic tires may be used until the tire threads show through and the tire profile starts to deform. For practical reasons, though, you should inspect your tires weekly so you know how worn they are. For important sporting contests, I prefer to use a tire that has been used for only two days, which takes off some of the newness but gives what I believe is the best traction. Most players prefer to use tires that have a minimum of tread (as opposed to normal everyday tire tread or ones that are totally smooth).

Most sport wheelchairs use high-pressure tires that need from 70 to 120 pounds per square inch. I like to inflate my tires just enough that the tires have a full profile. How much air pressure is needed to keep the tire profile full depends upon the player's weight. For practices though I often use a little less pressure so that I must work a little harder. Using high pressures does cause the tires to wear out sooner, though. I check my wheels and tires thoroughly every week with a tire pump that has a gauge. They are relatively inexpensive and work very easily. They can be bought at a bicycle shop or a large department store like Sears. Many individuals with a physical disability prefer electric air pumps.

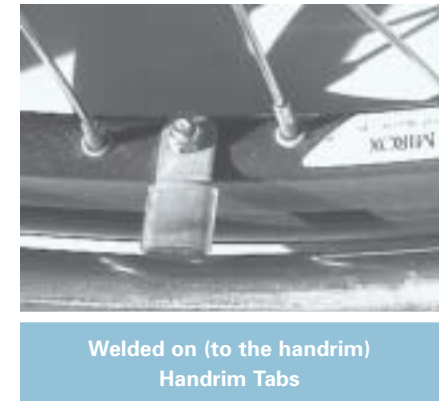
I prefer what are called thorn-resistant tubes that you can buy in bicycle shops because they are harder to puncture. Regular inner tubes are often pinched during placement on the wheel. The thorn-resistant ones have thicker rubber sides and consequently do not puncture nearly as easily. They are more costly, but well worth the money.

High-pressure tires however normally take tubes that are 1" in diameter while the thorn-resistant tubes usually come in 1 1/8" or larger diameters. The larger tube fits very tightly into the 1" high-pressure tires, possibly putting more side pressure on the tire and causing the tire to pop off of the wheel rim. Thus the player has to decide which use the wheels will be put to.

The tubes for the tires should be inspected monthly, for slow leaks or signs of rotting around the valve stem (which is particularly a problem in a smoggy city).

Handrims

Check the handrims for tightness every week. The 10-32 x 1/2" handrim attaching screws are usually made of steel and the wheel rims are normally made out of aluminum. Aluminum screws and nuts are sometimes used but they are not as long lasting. The screws and spacers that hold the handrims to the wheel come loose easily (from vibration and from independent movements of the rim and handrim as the wheel rotates), and this action can put a wheel out of action quickly through two actions: (a) loose steel screws can move around in their hole, enlarging the hole in the softer material of the wheel rim and (b) allowing the rim to bend because the handrim is not helping hold the rim rigid (a handrim is approximately 1/3 of a wheel's strength/rigidity). Yet all it usually takes is a screwdriver and a small wrench (or socket) to tighten the screws.



Welded on (to the handrim)
Handrim Tabs

Most lightweight handrims that are used for sport have welded-on tabs (clips).

Rim

The best rims for wheelchair basketball are the double-wall rims.

They are stronger, resisting the stresses from cambering and from side impact. Because there is often contact, sport wheels will occasionally become warped side-to-side. A warped wheel can be straightened but it will never again be as strong as it was originally. Mild warping can be straightened by selective tightening of the spokes. Major warping can only be corrected by straightening out the rim after removing the handrim, all of the spokes, and the hub. The rim can then be straightened by forcing

it flat (using the feet, rubber hammer, etc.) while it is lying on a perfectly flat surface.

A wheel out-of-round is caused by uneven pull from the spokes as the wheel rotates (due to inadequate care in maintaining equal spoke tight-

ness). The only way to correct this condition is to put the wheel on a truing stand and use the spokes to pull the wheel back into roundness. This is an advanced skill best left to a wheel expert (bike shop).

Check the rim of the wheel for warpage and out-of-round at least monthly. If it is caught early, these conditions can easily be corrected. If it is

left unattended, these conditions can cause the wheel to severely bend or to collapse completely.

Axle

The quick release axle for the big wheel should be checked weekly for bends. Clean the axle with alcohol, gasoline, or similar cleaner after it is checked for bending. Lubricate the push-button rod and spring with Teflon™ or silicon spray if the push-button is stiff (never use oil or grease as they leave a residue that attracts dirt). Replace a bent axle immediately.

Axle Sleeve

The axle sleeve (receiver) is a perfectly straight steel tube that is smooth on the inside and threaded on the outside. It fits into an axle plate or a camber tube/bar. The inside should be cleaned regularly and then lubricated with Teflon™ or silicon spray.



Double-wall Rim with Recessed Spokes and Nipples

USING A SPORT WHEELCHAIR SAFELY

Experienced, adult sports people usually set up their wheelchairs so as to maximize their competitiveness while maintaining a reasonable level of safety. Younger and inexperienced sports participants need to emphasize safety more while they are learning the basic competitive and safety skills. Only in this way can they later make informed decisions that may affect their safety while competing.

SOME OF THE FACTORS THAT CAN AFFECT A PLAYER'S SAFETY ARE FOLLOWING.

Anti-tip Casters / 5th Wheel

Anti-tip casters are used on a child's wheelchair so as to prevent the user from falling over backwards if they make a mistake and move their center of gravity too far back over the large rear wheels. These anti-tips typically are at least a couple inches above the floor and extend out behind the rear wheels of the wheelchair. Anti-tip castors are used on the modern sport wheelchair in order to allow players to move their rear wheels further forward, thus improving their wheelchairs' turning ability and providing them more wheel to push on (increasing speed). Moving the rear wheels forward also makes it easier to tip the wheelchair over backwards. The new style sport wheelchair's 5th wheel is mounted less than an inch from the floor and utilizes a 3" castor wheel to reduce rolling friction when they do touch the playing floor.

Strapping and/or Using a Seat Belt

Adult wheelchair athletes often use 6-10" wide soft, stretchable straps, attached around the waist or around the thighs, so as to keep their bodies firmly in contact with the wheelchair frame and to transmit the maximum possible force from the body to the wheelchair (i.e., to change directions).

Younger wheelchair users are often encouraged to (or made to) use a seat belt (like in a car) in order to keep them from falling out of or sliding forward in the seat of the wheelchair. Of course the soft, elastic straps used by adults can also keep the younger players in the wheelchair.

Leg Straps

Several wheelchair sports require a strap behind the feet (to prevent the use of the feet as a braking device). This strap also prevents the feet from accidentally falling off the back of the footplate. Many athletes, who have problems keeping their feet on the footplate (spasticity is often the cause of this), also use a strap in front of their feet so as to keep them from coming off the front of the footplate. Naturally these straps are stretched tightly around the feet in order to keep them in place. A strap in front of the feet should be made of a somewhat elastic material so that, in case the individual falls forwards out of the wheelchair, there will be less chance of an injury to the foot/ankle area.

Wheel Locks and Hands

Wheel locks (brakes) that do not completely fold under the seat, out of the way of the hands, are a danger to both the wheelchair user and their opponents. Many adult sports organizations don't allow them on their competitor's wheelchairs.

Jewelry

Athletes in all contact sports are forbidden to wear jewelry during competition; both to prevent injury to the individual and to his/her competitors. In a few instances athletes are allowed to tape over smaller pieces of jewelry.

Suitable Clothes

Individuals who use wheelchairs often have special concerns related to their clothes. Individuals without sensation in the buttocks need to make sure that they don't sit on clothes that are wrinkled. Pants with thick seams like jeans are also not advisable for these individuals. Either can cause pressure sores.

Some paralyzed individuals still sweat below their level of injury and when competing, the added moisture can create more friction between the seat sling or cushion and their buttocks. Clothes made of materials that allow moisture to escape quickly and that don't stick fast to the seat or cushion, are preferable.

Checking for signs of Pressure Sores

For those individuals without feeling (sensory feedback) in the lower extremities, it is necessary to check their bodies for red spots (areas of skin that do not blanch when pressure is applied by a finger) or abrasions/cuts as soon as possible after competing. Both of these are precursors (potential signs of) to the development of pressure sores; which if left untreated can hospitalize the individual for several months.

Seating Systems, Cushions and Padding

Many young individuals who participate in wheelchair sports need special everyday positioning support in order to (a) maintain proper sitting position and/or (b) spread the pressure of sitting evenly over the buttocks and thighs. This can take the form of a simple cushion to sit upon. Or it can be as involved as a complete seating system (seat, back, adjustable support pads, etc.). When absolutely necessary, these support items/systems can be used during sport training and competition. Most of these support items/systems, however, are not designed with sports in mind and may limit the individual's movement. An individual wanting to compete while eliminating some of these support items/systems should consult with their therapist or doctor before doing so.

Please note that some of the support brackets that hold the pads of a seating system in place may need to be padded with foam that is held on by tape. This is to protect other individuals from injury should they hit these brackets accidentally during competition.

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ED OWEN

Author

*The Sport Wheelchair:
Set-up and Maintenance*

BASIC TOOLS FOR THE SPORT WHEELCHAIR

A basic wheelchair tool kit should include the following:

- Spoke wrench
- Socket wrench with sockets that fit your wheelchair needs
- Screwdrivers, one standard and one #2 Phillips
- A couple adjustable wrenches
- Set of Allen wrenches that fit the wheelchair
- Open-end wrenches that fit the wheelchair: most common are 1/2", 3/4", and 7/16".
- Tire removal tools – a pair
- Tape measure
- Air pump
- Air valve adapter for French tube valve stems of many high-pressure sport wheels

AAASP Vision

AAASP envisions a society where sports for youth with physical disabilities or visual impairments are a common and vital part of America's education system.

About AAASP

In a dual governing alliance, AAASP and the Georgia High School Association oversee interscholastic athletics on behalf of Georgia's high school students with physical disabilities or visual impairments and those who are not disabled. AAASP oversees a statewide interscholastic athletic system for these students in grades one through 12. Six competitive sports leagues are offered throughout each school year: wheelchair basketball, indoor wheelchair soccer, power wheelchair hockey, track & field, beep baseball and wheelchair football.

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