



## Cycle Training

- ♦ Intro/overview of program
- ♦ SAFETY \* FUN \* LEARNING
- ♦ Policies and Procedures
- ♦ Disabilities and fitting
- ♦ What is the appropriate bike for a specific person?
- ♦ On-trail / Road etiquette and duties
- ♦ Where the rides will happen-Shady Rest, Mammoth Creek Park, local school parking lots, local mountain bike trails (venues will be student dependent)
- ♦ Go over how to fix a flat
- ♦ RIDE the bikes!

### **Role of the Volunteer**

#### **SAFETY \* FUN \* LEARNING**

- Promote SAFETY and On-trail/road etiquette
- Create highest level of independence
  - Assist student when needed i.e. transfers, guiding, pushing and pulling bike up hill if necessary, helping them get turned around, etc.
- Assessment, fitting, and picking out equipment
- Explain how equipment works and basic cycling skills

### **What to bring day of training**

Bike	Water
Helmet	Sunscreen
Comfortable closed toed shoes or riding shoes	Sun Glasses
Gloves	Lunch/snack.

### **Others things to carry on cycling days**

Pump	Sunscreen
Flags on bikes	First aid kit
Water	Duct tape
Snack	

Tools (multi-tool, tire iron, bike tubes, CO<sub>2</sub> cartridges, patches)

Adaptive equipment when needed (Velcro straps, Ace bandage to secure hands/legs, etc.)

## **PROGRESSION FOR INTRODUCING A STUDENT TO BICYCLE RIDING**

This is a great progression for students with developmental disabilities who are having trouble learning how to ride their own bicycles. Adjust the progression to the ability and comfort level of the student.

### **SAFETY \* FUN \* LEARNING**

Step 1: Assess the student's abilities and introduce bike safety – etiquette, where to ride, crossing traffic, etc.

Step 2: Introduce your student to the bicycle and bike safety. Explain what the brakes do and how to use them. Show them how the pedals work.

Step 3: Have your student practice walking the bicycle around the parking lot. Practice steering around different types of articles. Practice braking. Use a 1, 2, 3 count as an anticipatory command to braking. Have your student walk the bike around the parking lot until they are comfortable and ready to move on. Be sure your student understands these two concepts, so that they will not present a safety issue to themselves or others out on the bicycle path.

Step 4: Adjust the seat so that when your student is sitting on the seat, their feet are flat on the ground.

Step 5: Find a very gentle and gradual hill with a safe "run-out" spot. The slope should be reasonably straight. Have the student start at the top and walk their bike down the slope using the brakes to control speed. You will need to be sure the slope is gentle enough for them to accomplish this without the bike getting away from them. You can walk beside them to provide encouragement. Repeat this process until they seem to be comfortable.

Step 6: Once they can comfortably work the bike and operate the brakes have the student sit on the bike and have them lift up their feet and coasting for short bursts. Their feet will hang off to the side for balance. The goal is to coast for longer and longer periods. You can jog alongside to provide moral support and a helping hand if they start going too fast. You can make a game of it by timing each length of coasting and then asking them to "see if they can break their coasting record." Practice this until they can coast all the way down without assistance. Remember, it is important to make sure they don't pick up too much speed. This may increase their level of fear and the degree of danger.

Step 7: Once your student is comfortable with coasting, see if they can coast all the way down with their feet on the pedals (just coasting, no pedaling yet). Again, you can jog along for support.

Step 8: Introduce braking while sitting on the bike. Have your student slowly apply the brakes as they coast down the hill. Each time they brake, they can catch themselves with their feet. Then start back up again. Repeat this until you both feel comfortable with their braking ability. They need to be able to brake on command.

Step 9: Introduce pedaling once the student can coast and brake on command. Start by coasting and then add in pedaling and braking for speed control. Have your student brake intermittently down the slope until they reach the bottom.

Step 10: Practice, Practice, Practice!

The basic steps to riding a bicycle have been introduced. Your student now needs plenty of practice time. Have them practice riding on a straight flat area, so that they can get the feel of balancing, pedaling and braking with out coasting. Spend a good deal of time riding on flat areas so, that your students become comfortable with their cycling abilities.

Step 11: More challenges - steering around objects, speed control with quick stops, introduce riding on the bike paths, introduction to shifting gears.

Note: Each student will progress at different rates. You will need to adapt this progression to your student's individual needs and abilities. You may need to make adaptations to the bicycle or hold on to the back of their seat for assistance. Be prepared with Velcro straps to keep pant legs away from sprockets and wheel.

## HANDCYCLING

### **Safety**

- Stay together – stay with your buddy
- Biking etiquette
  - Ride on the shoulder of the road (to right of white line)
  - Single file when on busy roads
  - Stay to the right on bike paths
- See and be seen in traffic
  - Use safety flags with handcycles
  - Rider riding up hill on a trail has the right of way
- Staying hydrated
- Wear a Helmet
- Wear sunglasses
- Wear gloves (optional)
- When going around corners, check your speed – you can flip if you go too fast and too sharp

### **Accessory options**

- Mirror, Gloves

### **Fit and adjust handcycle for maximum efficiency**

- Proper cushioning (avoiding pressure sores)
- Leg rest length – best to have legs slightly bent
- Different types of cycles ("lean to steer", "turn to steer")
- Proper positioning for most efficient crank stroke, arm length.(avoid shoulder trouble)
- Seat belts/stability devices

### **Equipment Overview**

- Brakes (engaging for parking & while riding)
- Dampener (if equipped)
- Size of handcycle (they take up space in the road)
- How many gears & how are they shifted

### **Shifting and braking**

- Learning how to properly apply gear changes
  - Try to keep chain relatively straight front to back, not diagonal
  - When going down hill, shift to a higher (harder) gear to keep momentum going
  - When heading up hill, shift to a lower (easier gear) early to carry momentum

### **Commands and hand signals**

- Turning, left, right, stop
- Pointing: objects up and back
- Verbal commands: "car back" / "car up"
- Passing (i.e. on your left)

## **CYCLING ASSESSMENT, EQUIPMENT SELECTION & FITTING**

### **Initial Assessment**

- Leg strength or arm strength more proficient
- Safety on a cycle: can they pedal independently without creating injury to themselves or others
- Previous experience with cycling or other sports
- Stability issues: Trunk stability, Balance: lateral, fore/aft, hand grip
- Comfort level
- Student goals
- Seizures: Have they had seizures recently? What kind? Any prior warning?  
This is a safety issue. If a participant has had a grand mal seizure recently, they may not be allowed to participate in the program.
- Cognitive reasoning & decision-making abilities: Does your student comprehend safety issues and consequences? What do you need to do to adapt your explanations to their learning style?
- Allergies i.e. bee stings, food, etc.

### **Equipment Assessment**

- Type of equipment: Hand cycle (upright or recumbent/ beginner or advanced), Tandem, Standard Bicycle, other...
- Bike fitting: seat height/adjustment, handle bar length, pedals, leg length, size of bike
- Helmet Fitting: size, adjusting the straps, adding pads
- Gloves

### **Standard Bicycles**

- Leg/foot assessment: Are their legs straight? Can they comfortably & safely pedal (muscle memory, swinging legs into the spokes)? Can they keep their feet on pedals? Do they need toe clips to keep their feet on the bike?
- Grip Assessment: Can they hold onto the handle bars? Do they need adaptive attachments i.e. Velcro straps or Ace bandage to secure hands?
- Safety: Will their legs hit the bike? Do they need a shin guard, padding, Velcro straps to secure legs?

### **Handcycles**

- Padding (prevent pressure sores at all costs)
- Foot-rest adjustment
- Handle-bar length (adjust for maximum efficiency and comfort)
- Seat adjustment – fore / aft and tilt
- Stability devices (seat belts, Velcro leg straps, hand gloves for quads, etc.)
- Are their legs hitting the crank

# CYCLING EQUIPMENT

## TERMINOLOGY

**Recumbent:** A cycle where the participant is seated low to the ground with their legs stretched out in front of them. This can be 2-wheeled, 3-wheeled, hand-powered or foot-powered.

**Upright:** A cycle where the participant is sitting with their legs underneath them, as one would in a chair. This provides the cyclist with a higher profile allowing them to see and be seen more easily.

**Lean-to-steer:** The cycle is designed with a pivot point under the seat. To turn the cycle, the participant leans their body to one side or the other to pivot the front of the cycle.

**Turn-to-steer:** The cycle has a spring attached to the front fork which allows the front wheel to turn and then snap back into neutral position. To turn the cycle, the participant steers the wheel in the direction they want to turn. This is a good option for individuals with balance problems.

**Leg Straps:** Leg straps should always be located and used on handcycles to keep participants' legs from falling out of the bike. If a participant does not have feeling in their legs and one is bounced out of the cycle, it can get caught underneath and break.

**Safety Flags:** Most handcyclists use a long pole with an orange safety flag attached to the top when cycling in traffic. Recumbent cycles are low to the ground and are hard for most motorists to see. The flag provides a higher profile and alerts motorists to the presence of handcyclists.

## HANDCYCLES

**Top End XLT:** This is an adult "turn to steer" recumbent handcycle. It has an internal gear hub system with seven speeds. The shifter is located on the right side of the cycle underneath the seat. To increase the gear push down, to decrease the gear, pull up. It has two different braking mechanisms. The first is a standard hand brake located on the left side of the handcycle underneath the seat. The second, a coaster brake, is engaged by pulling backwards on the hand cranks. The XLT's rear wheels are removable if needed. Simply push in on the black circle in the center of the spokes and pull back keeping the black circle depressed. There are lateral body supports located on either side to assist participants with balance issues. These can be moved out of the way by pushing up and flipping them back. The XLT is also fitted with a seat belt for participants who need extra support. **Adjustments:** The easiest way to adjust the XLT is to move the foot rests fore and aft by loosening the two hex bolts located on the inside of the rest (A). If the participant cannot comfortably reach the hand cranks, the seat can be adjusted fore and aft by loosening the clamps on the rear post behind the seat and loosening the bolt at the post/seat connection (B). This will allow the seat to "rock" along the frame. The seat can also be moved higher or lower by moving the bolt underneath it up or down along the metal adjustment piece (C).

**Junior XLT:** The Junior XLT is a miniature version of the XLT. The only difference is that the Junior is smaller because it is built for children.

## HOW TO CHANGE A FLAT TIRE

Flat tires are the most common mechanical problem cyclist's encounter. We highly suggest that you bring the appropriate tools if you have them and know how to fix a flat tire. If you carry tools and extra tubes someone can assist you with a repair.

- 1) Using the quick release system or an appropriately sized hex wrench, remove the entire wheel from the cycle.
- 2) Use tire levers to separate one side of the tire from the rim of the wheel
- 3) Pull out the flat tube (ensure that you have removed any outside attachments affixing the air valve to the rim)
- 4) Inspect the tire for punctures and possible debris. Run your hand along the inside of the tire to feel for debris, thorns, nails, etc. Visually inspect the tire for possible puncture causes.
- 5) Be sure that you have the correct size tube for the tire. Unfurl the new tube and inflate it with a very small amount of air (one or two pumps). Handcycle tubes may be different from standard size road tubes.
- 6) Insert the new tube into the tire. Ensure that the tube is flat in the tire without bunching or pinching. Make sure the air valve is straight in the exit hole.
- 7) Carefully replace the tire in the rim, ensuring that you are not pinching the tube between the tire and rim.
- 8) Use tire levers to pop the last section of the tire into the rim if necessary.
- 9) Inflate the tube to proper PSI or until it feels firm if you do not have a gage.
- 10) Replace the wheel on the bike, ensuring that the wheel runs straight without a wobble and without rubbing against the brakes.

## Locations for Cycling with Disabled Sports Eastern Sierra

Shady Rest - route from Main St. to park is mostly downhill – some dirt cutouts to give the sensations of mountain bike riding. A lot of shade. Midway off trail stop has three benches and trashcan. At park there is ability to do “circle ride” around one of the ball fields. Has picnic tables/shade and playground equipment.

Shady Rest Entrance (off Main St.) to Industrial Park – starts off with tunnel. Slight uphill, runs adjacent to RV park. Has pull-off sections, that can be accessed through the RV Park for cars, etc... to get supplies or provide pickups.

After leave RV park - Woodsy feeling with easy riding.

After leaving the Industrial Park there is a fork.....

Industrial Park to Mammoth Schools - right fork and is less steep and runs adjacent to Brothers Skateboard Park and Trails housing development.

Industrial Park to Mammoth Creek Park – left fork and provides a steady uphill climb. On left at top of climb is the turn off to a vista that has benches and a picnic table. Back on trail is a slight downhill section to Mammoth Creek Park via a tunnel. Trail runs along south side of park and crosses a bridge before trail runs parallel to Old Mammoth Road. Location has shade, playground and tables.

Other paved trails – behind Little Eagle to Snowcreek and trail from Main Street to Meridian.

- Schools: *(must have prior permission to use school grounds)*

Mammoth Elementary School – a gate at entrance to blacktop/playground. Other side has chain across pavement – better access, total of three playgrounds w/ equipment at site; good blacktop

Mammoth Middle School – one playground w/equipment, flat blacktop, picnic tables at rear. Between this school and high school short dirt area that could be used for educational purposes – does lead to main city bike route.

Note: use of chalk for pavements; get permission and liability releases to use (individual schools, school district, Mono County, town, etc...); other areas with parking lots: Canyon, Little Eagle

## Mountain Biking

### On Trail Strategies and Riding Techniques for Mountain Biking

Athletic Position	Bent knees with arms bent at elbows Eyes looking up and further up the trail Center of gravity through the center of the bike (between wheels)
Braking	Apply the rear brake first when both brakes are used Place more pressure on rear brake than front brake Steep down hills may require more braking using the rear brake and light front braking
Shifting	Maintain a relatively constant cadence Anticipate terrain, look up and plan ahead Shift to harder gears when going down hill Shift early to easier gears when heading up hill to carry momentum Try not to have chain diagonal front to back Practice using gears...ask other what gear they are using
Ascending	Pace yourself-don't burn out immediately Carry momentum into the hill – shift early to easier gears Anticipate gear shifts – maintain a high cadence When standing, keep weight back over the rear wheel Bikers coming up the hill have the right of way but be ready to move!
Descending	Stand and keep weight back over the rear wheel – pedals level Use rear brakes more than front brakes Steep descents may require rear wheel lock up – be careful using front brake Bikers coming up the hill have the right of way!
Crashing	If you think you are going to crash, let go of the brakes especially the front brake. This will allow the wheels to spin and give you control of the steering bike. Resume braking for speed control after gaining control of the bike
Stopping	Do not stop in the trail Always step to the side of the trail to rest or wait for others