

5 Core exercises for wheelchair users

The Manual wheelchair operation involves co-ordinated efforts of several muscle groups.

Using a wheelchair involves more than just upper body strength; it engages a variety of muscle groups to ensure efficient and safe mobility.

Primarily, the pectoralis major and anterior deltoids are activated during propulsion, as they help push the wheels forward. The triceps also play a significant role in extending the arms during each push. Additionally, the latissimus dorsi and rhomboids in the back are engaged to stabilize the shoulders and maintain posture. Core muscles, including the rectus abdominis and obliques, are crucial for balance and transferring force from the upper body to the wheels. Even the biceps are involved during the recovery phase of the push, pulling the hands back to prepare for the next stroke.

Understanding these muscle groups highlights the importance of strength and endurance training for wheelchair users to prevent fatigue and injury.

Here, we are explaining 5 basic exercises for manual wheelchair users to improve core fitness.

Repeat each exercise for 8-10 times and perform at least 2 sets in beginning. Later depending on physical fitness level one can add resistance and increase repetitions too.

Exercises are as follows-;

- 1. Forward bends**
- 2. Spinal twists with crossed arms**
- 3. Seated Forward Crunch**
- 4. Arm raises (Forward and Lateral)**
- 5. Seated push-ups**

Before starting, remember these crucial safety tips:

- 1. Get Medical Clearance:** Always consult a physical therapist or doctor before starting a new adaptive exercise routine.
- 2. Ensure Stability:** Lock your wheelchair brakes and make sure you're seated on a stable surface with good posture.
- 3. Warm Up:** Begin with 3–5 minutes of gentle upper body movements like shoulder rolls, arm circles, or deep breathing stretches to prepare your muscles.
- 4. Attention to Form:** Make slow, controlled movements and do not hold your breath. Good posture and breathing minimize strain and increase effectiveness

1. **Forward bends** - This exercise may look like a crunch , by starting in an upright sitting position, it functions more like a seated crunch and glute extension.

To do this exercise follow these steps :-

A. Sit tall at the front of the chair, away from the backrest.

B. Engage the core and hinge at the hips,leaning the torso forward as far as it will go while maintaining this tall posture.

C. Pause briefly before returning to the start position.

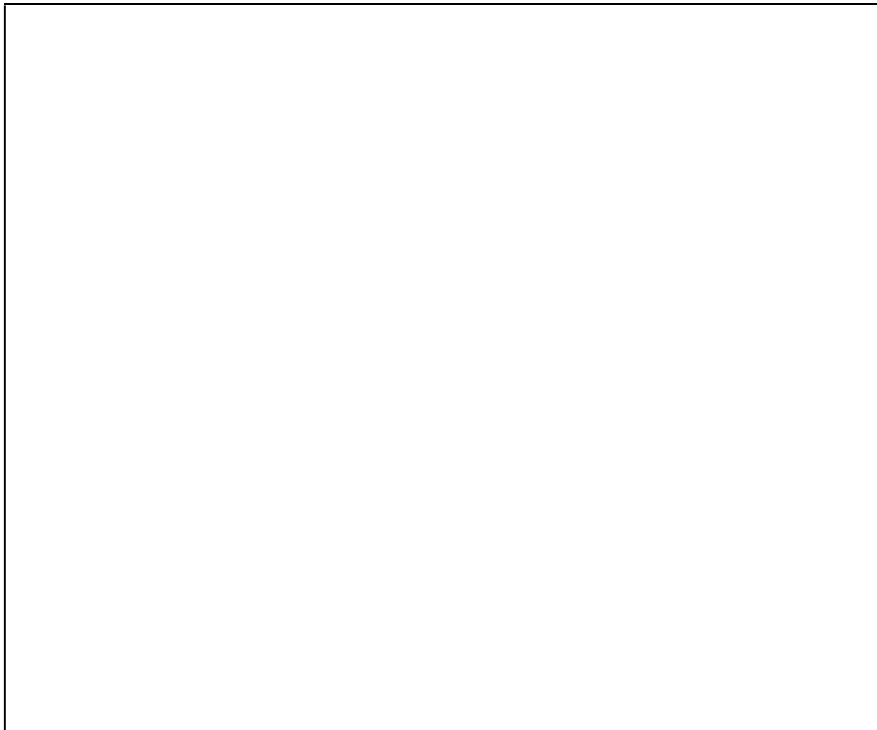
D. This is 1 repetition. Perform 2 sets of 8-10 repetitions.



2. **Spinal twists with crossed arms** - This exercise promotes spinal mobility and flexibility , specially for oblique muscles of spine.

To do this exercise follow these steps ;-

- A. Sit tall at the front of chair/wheelchair, away from the backrest.
- B. Cross the arms in front, placing each hand on the opposite shoulder. Keep the elbows pointing out to help maintain posture.
- C. Twist the upper body gently to the left as far as the spinal flexibility allows, then return to center.
- D. Repeat this movement for right side.
- E. This completes one repetition.
- E. Perform 2 sets of 8-10 repetitions.



3. Seated Forward Crunch - it stimulates patient's core muscles. It is modified version which is safe for patients with wheelchair. This exercise develops abdominal and postural strength. It activates the core that is necessary for daily activities such as reaching forward or pushing the wheelchair.

To do this exercise follow these steps :-

- A. Sit up straight with your back straight and feet planted firmly on the floor.
- B. Put your hands at the back of your head or cross them over your chest.
- C. Engage your abs and carefully lean forward slightly without tilting your shoulders, and then come back upright.
- D. Perform 2 sets of 8-10 repetitions.



4. Arm raise exercise - This can be done in both direction , forward and lateral, using dumbbells. you can swap the dumbbells for heavy household items if you don't want to buy a set. Front raises predominately strengthen the front of the shoulders, but also work the upper chest, and can really help to build strong, stable shoulders.

To do this exercise follow these steps :-

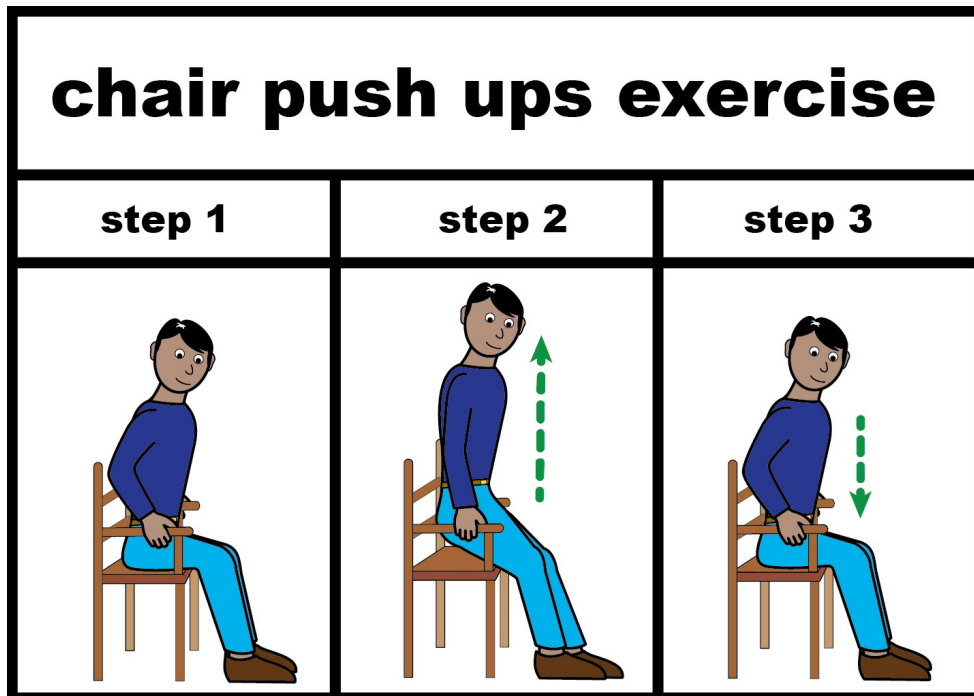
- A. Hold a dumbbell in one hand, palm facing down, with your arm extended down by your side.
- B. Use the other hand to hold the side of your chair.
- C. Keeping your shoulders back, slowly raise the dumbbell up to shoulder height. Keep your arm straight throughout.
- D. Pause before returning back to the starting position.
- E. This is one repetition
- F. Perform 2 sets of 8-10 repetitions.



5. Seated push-ups on wheelchair - This exercise is fantastic for building upper body strength, particularly the arms, chest, and shoulders. It also engages your core muscles for stability.

To do this exercise follow these steps :-

- A. Position your wheelchair in a safe, stable area.
- B. Place your hands firmly on the armrests of your wheelchair.
- C. Slowly push down on the armrests, lifting your body slightly off the seat.
- D. Hold this raised position for 2-3 seconds, focusing on engaging your arm and chest muscles.
- E. Slowly lower yourself back down to the starting position.
- F. Perform 2 sets of 8-10 repetitions.



Dr Deepa Sethiya (PT)

PROFESSOR(Physiotherapy)

OPD - Wednesday and Friday

CRGH Surasa.

Time - 9am to 4pm

