

The

ABC Toolkits

**Agility, Balance
& Coordination**
45 Minute Plans



Agility, Balance & Coordination 45 Minute Plan



This plan has been created as part of the Introduction to Physical Activity Workshop to educate and inspire you to become more active. Please do not complete any of the exercises if you have not attended the course or been shown how to complete the exercises correctly. Do not embark on a new exercise routine without consulting with your G.P. or Rehabilitation Consultant.

1. Warm-up (0-5 minutes):

Why: Warming up allows your body to prepare for exercise and minimises the risk of injury.

A. Seated warm-up (2 minutes)

Aim: Gently warm up the upper body and increase heart rate.

Starting position: Sit at the front of a chair, shoulders back, head up, feet/foot flat on the floor. Be aware of how the muscles control the movement. Keep torso still and weight evenly on both buttocks.

Movements: Complete 30 seconds of each of the following;

- Pump arms up and down
- Raise arms over the head and lower to sides – as if flapping wings
- Arms at side and shoulder height and bend elbow in and out.
- Touch the floor to the side of the heel with your hands
- Tap heel as far in front as possible.
(Development: Do this standing or with the eyes closed).

All these movements can be performed by wheelchair users, upper and lower limb amputees.

B. Moving warm-up (3 minutes)

Aim: Gently warm up the lower body and increase heart rate.

Starting position: Maintaining a good standing posture, try not to look down and don't bump into anything.

Movement: (those unable to stand may

complete this in a wheelchair)

- Hookie Pookie dance –
Bring your left foot forward and back (use arms if unable to extend leg)
Take 4 strides forward into the room (or move forward using a wheelchair)
Turn around
Return back to beginning position.
- Speeding Move and Touch
Move around for 30 seconds touching as many objects as possible.
Repeat and try and beat your score by 5 items.
- Repeat Hookie Pookie with right leg/arm.
- Repeat speed move, trying each time to beat score by 5.

2. Static Exercises (20 minutes):

Why: This section focusses on balance and coordination. And the concept of Static Balance which is fundamental to all other aspects of exercise. Through these exercises you will develop control and strength to be able to manage challenges to balance.

If you can, perform these exercises in front of a mirror to improve control. During all exercises, you should keep breathing!

Small movements that are completed under control are far better than big movements completed poorly.

Slow and Steady is the key for balance exercises.



A. Toe Taps forward ▲

Aim: To be able to shift weight from limb to limb, while isolating the hip from the trunk to produce the movement, improving control of these muscles.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. To make sure that the movement comes from the hips, the elbows should not move – no twisting or moving up and down.

Movement: Begin on two legs and slowly shift your weight onto one leg while lifting the other leg forwards to tap the toe in front. After the toe has been tapped, the foot should be returned to the starting position and the other leg should complete the movement.

Repeat the movement as above, but tap to the side.

Repeat the movement as above but tap behind – *don't lean too far forward, keep*



the chest and head up and looking forward.
Repetitions: 10 times in each direction on each limb.

(Development: Complete all the movements on one leg before swapping to the other leg.)

- Those challenged by this:
May use a chair back to assist balance
- Those unable to stand:
Complete the movement in seated position, control the trunk and transfer body weight from one buttock to the other.

B. High Knees ▲

Aim: To be able to shift weight from limb to limb, while isolating the hip from the trunk to produce the movement.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. To make sure that the movement comes from the hips, the elbows should not move – no twisting or moving up and down. Minimized side-to-side movement.

Movement: Begin on two legs and slowly shift your weight onto one leg while lifting the other leg up into a marching position. After the knee has been lifted, the foot should be returned to the starting position and the other leg should complete the

movement. Lift the knee as high as possible, but maintain balance. Think about how the foot is placed back on the floor.

Repetitions: 20 times on each limb.

- Those challenged by this:
May use a chair back to assist balance
- Those unable to stand:
Complete the movement in seated position, control the trunk and transfer body weight from one buttock to the other. If possible raise the knee and then extend the leg.

C. Disco Glide

Aim: To be able to shift weight from limb to limb with control, to translate into a dynamic movement.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. To make sure that the movement comes from the hips, the trunk and shoulders should slide over the feet, not move up and down, lean side to side or twist.

Movement: You should begin on two legs with feet together and slowly take a step to the side. When the leg is safely to the side the second limb should be brought to join it. Now, leading with the other leg, return to the starting point. Imagine the body is sliding between 2 walls very close together, only the legs can move, the trunk and head must just glide along.

Repetitions: 10 times in each direction.

(Development: Lifting the knees as they move to the side.)

- Those challenged by this:
May perform next to wall and use this to assist balance.
- Those unable to stand: Perform seated, take one leg out as far as possible to the side and bring the other leg to join it, twisting in the chair, try not to use your hands.



D. Superman ▲▲▲

Aim: Training full body balance with weight supported on all limbs.

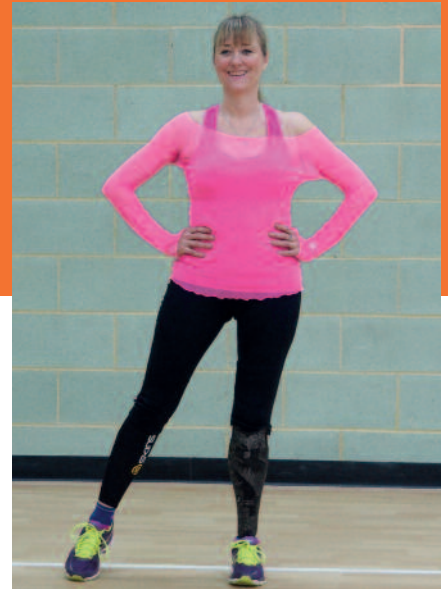
Starting position: This exercise is floor based and begins with the person on all fours. Going safely to the floor and coming safely back to standing afterwards is very important, and can be used as part of the training (it is very useful for falls training). Find your own way of executing the task, but be aware of how and why you chose this strategy.

Movement: Extend the right arm out so that it is straight next to your ear in a superman pose; hold this for a 5 second count. Return it to the starting position, and repeat with the left arm. Repeat with each leg, extending it straight out parallel with the floor (as if flying) and point the toes. Repeat for the left. The Hip, shoulder and wrist/ankle should be in line when performing this exercise, and the abdominal muscles must be tensed to achieve and



Agility, Balance & Coordination

45 Minute Plan



maintain this position.

Repetitions: 10 times for each limb
(Development: Left arm and right leg may be extended at the same time, repeat with the right arm and left leg.)

- Those challenged by this:
May use a chair to support one shoulder if unable to maintain weight on arm (or, for example if upper limb amputee)
- Those unable to stand:
Should attempt to perform this on the floor, but may complete on stomach rather than all fours. For those unable to leave chair, try extending one leg at a time, then lifting the opposite heel ½ inch off the floor, hold for 5 seconds.

3. Dynamic Exercises (15 minutes)

Why: These exercises introduce agility and develop balance and coordination. Once you have developed your proprioception (the sense of where your limbs are in space) and you are strong enough to complete the balance exercises safely, movement can be introduced. Again, smaller slower movements are important to begin with, but as you grow stronger and more confident in your movement patterns, the movements can speed up and the distance travelled can increase.

A. Marching

Aim: Transfer weight from limb to limb whilst performing a forward motion, controlling the return to two-legged standing.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. Try to isolate the movement to the legs and minimise the movement of the trunk. Ideally the

shoulders should not move side to side or twist, but should only move forward with the feet. Avoid tipping the pelvis. To compensate for the limb loss, some trunk movement will be required, but it should be minimised.

Movement: Similar to High Knees, but now you should move forward. Feet should be softly placed back on the floor at each step, with control.

Repetitions: 15 paces forward, turn and come back. Repeat 3 times.

(Development: Repeat, if possible lifting the knees higher. Then, if possible, move at an increased speed; spend as little time as possible with the feet in contact with the floor.)

- Those challenged by this: May perform next to a wall and use this to assist balance.
- Those unable to stand: Move the wheelchair forward whilst lifting the knees, in turn.

B. Side Stepping

Aim: Transfer weight from limb to limb whilst performing a sideways motion, controlling the return to two-legged standing.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. Try to isolate the movement to the legs and minimise the movement of the trunk. Ideally the shoulders should not move side to side or twist, but should only move forward with the feet. Avoid tipping the pelvis. To compensate for the limb loss, some trunk movement will be required, but it should be minimised.

Movement: Similar to Disco Glide, but now move sideways along a line. Return back to the starting position.

Repetitions: 10 steps in each direction 3 times.

(Development: Lifting the knees)

- Those challenged by this:
May perform next to a wall and use this to assist balance.
- Those unable to stand:
Turn wheel chair to left and roll forward down the line, turn and repeat in opposite direction.

C. Side stepping with a twist

Aim: Agility is challenged with this twisting motion.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. Try to isolate the movement to the legs and minimise the movement of the trunk. Ideally the shoulders should not move side to side or twist, but should only move forward with the feet. Avoid tipping the pelvis. To compensate for the limb loss, some trunk movement will be required, but it should be minimised.

Movement: Similar to Side Stepping, but after two steps leading with one leg, twist around on that leg and lead (going the same direction) with the other leg.

Repetitions: 10 steps in each direction 3 times.

(Development: Speed up the movement, so you are bounding from one foot to another.)

- Those challenged by this:
May perform next to a wall and use this to assist balance and may have to hop to twist. If this is the case, keep the movement very small.
- Those unable to stand:
Move forward then turn, forward in wheelchair until 2 circles are completed and then repeat in opposite direction



D. Grapevine ▲

Aim: Agility is further challenged with a full twisting motion as you try to follow the line. These movements really challenge your balance, proprioception, and coordination and develop agility.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. Try to isolate the movement to the legs and minimise the movement of the trunk. Ideally the shoulders should not move side to side or twist, but should only move forward with the feet. Avoid tipping the pelvis. To compensate for the limb loss, some trunk movement will be required, but it should be minimised.

Movement: The Grapevine is weaving with the legs. Mark a straight line across the floor and stand at one end of it, placing your toes on the line and facing forward. Step to the left with your left foot, then bring your right foot behind it. Move your left foot to the side again, then bring your right foot beside it. Repeat this sequence to the end of the line, and then go back, this time starting with the right foot.

Repetitions: 10 steps in each direction 3 times.

(Development: Try to increase your speed, but be aware of safety.)

- Those challenged by this: Perform next to a wall and use this to assist balance and may have to hop to twist. If this is the case, keep the movement very small.
- Those unable to stand: Try to perform weaving motions with the wheelchair.

E. Monster Steps

Aim: This movement is good for development of the muscles in the bottom, whilst developing balance on a wider base of support.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. Try to isolate the movement to the legs and minimise the movement of the trunk. Ideally the shoulders should not move side to side or twist, but should only move forward with the feet. Avoid tipping the pelvis. To compensate for the limb loss, some trunk movement will be required, but it should be minimised.

Movement: Step your left leg forward and to the side (diagonally out 45 degrees) and repeat with the opposite leg so that you are standing with legs wide apart, each step forward should end in the same stance.

The weight should be transferred over the stance leg so that you are fully upright between steps.

Repetitions: 20 steps forward, 3 times.

(Development: Try to tap the heel of the moving leg against the shin of the opposite leg between each step.)

- Those challenged by this: Without fully transferring the weight, keep the trunk towards the centre and move quickly from one leg to the other.
- Those unable to stand: Turn wheelchair to the left and take your left leg as far at to the side as possible and place weight through the leg (you may push down into the arms as well to allow lifting off the seat). Place leg back in centre and repeat on the opposite side.

► F. Backwards walking

SOME PROSTHETICS ARE NOT DESIGNED FOR WALKING BACKWARDS AND MAY COLLAPSE SO BE VERY CAREFUL IF YOU ARE TRYING THIS AT HOME.

Aim: Walking backwards gives you a chance to work out all of the muscles in your legs, such as your quadriceps and calves, which take a backseat to your hamstrings and glutes during regular walking. It also works out your hamstrings in a different way.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. Try to isolate the movement to the legs and minimise the movement of the trunk. Ideally the shoulders should not move side to side or twist, but should only move forward with the feet. Avoid tipping the pelvis. To compensate for the limb loss, some trunk movement will be required, but it should be minimised.

Movement: As you slowly step backwards, look over each shoulder to see where to go, don't always choose the same one. It can help if you find a straight line to focus on when walking backwards to help you with foot placement.

Repetitions: 10 steps, 3 times.

(Development: Try to increase your speed, but be aware of safety.)

- Those challenged by this: Start one step away from a wall, and step backwards to the wall, step forwards again and repeat.
- Those unable to stand: Use the wheelchair to move backwards, pushing downwards into one leg, then the other as you go.

• **NB:** Walk backwards – easier said than done! When you walk backward one of the biggest risks is falling or tripping over.



Agility, Balance & Coordination

45 Minute Plan

→ G. Long steps

Aim: This movement tones and uses hip flexors and extensors whilst challenging balance with a wider base of support.

Starting position: Hands should be on hips, where possible, with elbows sticking out to the side. Try to isolate the movement to the legs and minimise the movement of the trunk. Ideally the shoulders should not move side to side or twist, but should only move forward with the feet. Avoid tipping the pelvis. To compensate for the limb loss, some trunk movement will be required, but it should be minimised. Don't allow the pelvis to tip from side to side – use the bottom muscles to keep it level.

Movement: Take controlled, long steps, with each step feet should be softly placed back on the floor, with control. Decide on a distance and try to walk the distance in as few steps as possible.

Repetitions: 15 steps forward, 3 times.
(Development: Try to increase your speed, but be aware of safety.)

- Those challenged by this:
Stand next to a chair (to hold onto) and take left leg forward, bring foot back to start position and repeat on opposite side.
- Those unable to stand:
Place feet forward and transfer body to front of wheelchair, tuck in feet and transfer back.

H. One leg stance

Aim: Challenging static balance.

Starting position: Stand next to a chair back for support as necessary, transfer weight to the intact limb. Hands crossed across chest.

Movement: Raise the opposite leg off

the ground and hold for a count of 10. Repeat and attempt on the prosthetic side
Repetitions: 10 second holds, 5 times on each leg (where possible.)
(Development: Those who are strong can try and hop, but only on the sound limb.)

- Those challenged by this:
Standing, face on to the chair back.
- Those unable to stand:
Aim to lift bodyweight through arms, with one leg only on the floor, if strong enough attempt to do this with opposite arm only.

I. Tennis ball under foot exercise

Aim: This is useful for developing proprioception (the ability to sense stimuli arising within the body regarding position, motion and equilibrium) as well as control of the prosthetic limb.

Starting position: Place a tennis ball on the floor and using your prosthetic limb, guide the ball under your foot.

Movement: Roll the foot backwards and forwards over the ball, then attempt to roll the ball around in a circle.

Repetitions: aim to control for 10 seconds each movement 3 times on each leg.

(Development: for those able to balance on the prosthetic limb safely, this may be repeated on the opposite side.)

- Those challenged by this:
Use the back of a chair for support. If not wearing a prosthetic, perform this seated with one foot only.
- Those unable to stand:
This can be performed seated.

J. Catch

Aim: Developing hand-eye coordination, reaction speed and throwing accuracy.

Starting position: If alone you can bounce

the ball against a wall, or you can play in a group. You must be at least 3 strides away from each other or the wall.

Movement: Throw the ball from one to another, first try and throw in backhand to about shoulder height, this can progress to trying different throws and making it harder to catch.

- Those challenged by this:
Can toss the ball into the air and catch it themselves.
- Those unable to stand:
May participate equally.

4. Cardiovascular (10 minutes)

Why: Cardiovascular fitness has a number of health benefits, including increased stamina, weight management, reduced health risk and improved emotional state. It is good to round off the session with something that will get the heart rate up and has you breathing more heavily and sweating by the end.

In a group you can play a game such as;

- Tig/Tag
- Stuck in the mud
- Foxes and geese
- Pick up

As a solo participant at home, you can try dancing to your favourite music or walking around at an increased pace.

If you need a more specific task, place three chairs in a row, one stride apart and start seated in the first chair, stand and walk to the next chair, sit and repeat, going one way and then the other. Move as quickly as you can, remember you are trying to work up a sweat.

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These 3-hour workshops are a mixture of theory and practical sessions covering:

- What is sport and physical activity
- Overcoming barriers
- The importance of being active
- How to access sport and physical activity
- Agility and balance exercises
- Strength and conditioning exercises

Who are they for?

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The information in this resource has been developed from research which was conducted at the University of Roehampton. The resource is under constant review by the Sport and Exercise Science Research Centre to ensure its safety and efficacy.

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