UNIVERSITY OF
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UHN Toronto Rehabilitation Institute

Xbox Kinect
'How To' Manual

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PLEASE NOTE: This manual version is specific to the Xbox <u>One S</u> console with Kinect.

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Introduction and Background

What is the Xbox One S with Kinect?

The Xbox One S with Kinect is a motion-based gaming system created by Microsoft (Figure 1). The Xbox One S console can be used for several different activities such as playing games, connecting with friends, watching videos or using the internet. **This manual will focus solely on the gaming aspect of the Xbox One S with Kinect.**

Figure 1. The Xbox One S console (left) and the Kinect sensor (right)

How do you interact with the Kinect sensor?

The Kinect uses motion sensors to track the entire body (hands, arms, legs, etc.), allowing players to control the interaction by simply moving their limbs (e.g. waving an arm). Body movements captured by the Kinect are transferred to the game (Figure 2).

Figure 2. An example of the Xbox Kinect interaction

How accessible is this device?

The Kinect sensor is user-friendly and accessible for people with a wide range of abilities. The Kinect can be played while standing up or sitting down, which is useful for people who use mobility devices (e.g. wheelchairs) or have other physical challenges. However, if a player does choose to sit down while using the Kinect, they will only be able to play games that only involve the upper body (e.g. bowling or darts) and not games that require the lower body (e.g. soccer).

Where can Xbox Kinect be used?

The Xbox Kinect console can be set up anywhere that has an HDMI-compatible television (TV) set and a nearby electrical outlet. While an internet connection is not necessarily needed to use the system, it is recommended that the system be used in an area with a hard-wired or wireless (Wi-Fi) internet connection.

PLEASE NOTE: This manual version is specific to the Xbox <u>One S</u> console with Kinect.

Getting Started with the Xbox One S Console

What are the components of an Xbox One S console with Kinect? (Figure 3)

1. Xbox One S console
2. Power cable
3. Xbox One S wireless controller (requires two AA batteries)
4. HDMI cable
5. Kinect adapter cable (purchased *separately*)
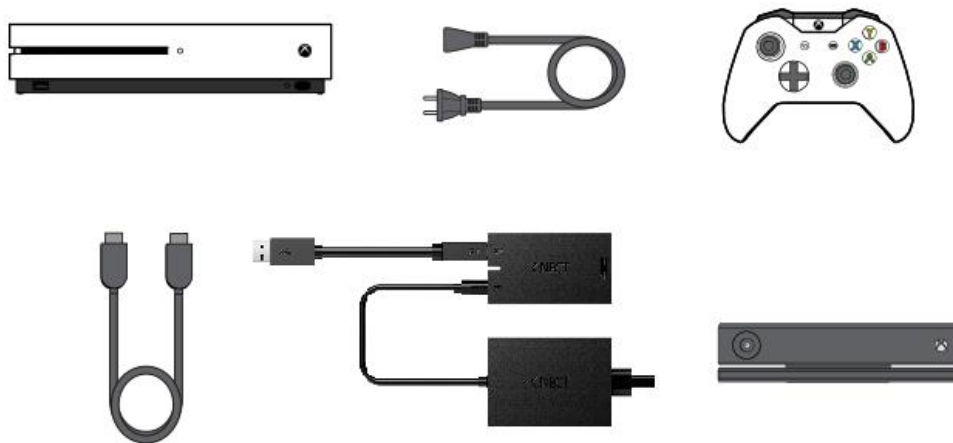6. Kinect One sensor (purchased *separately*)

Figure 3. Items 1-4 are purchased together; items 5-6 must be purchased separately

How do I assemble the Xbox One S Console?

1. Position console

Place the Xbox One S console near a TV set and an electrical outlet. The console should sit horizontally rather than vertically (see Figure 4) and be placed on a flat yet elevated surface (e.g. a table). Do not set the console on a carpeted surface and do not cover the console with heavy items (e.g. books).
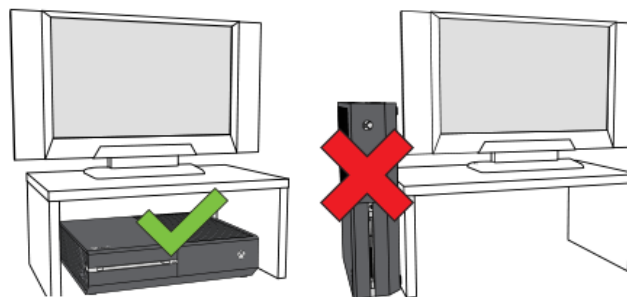

Figure 4. Proper versus improper placement of the Xbox One S console

2. Connect the console to a power supply

To connect the Xbox One S console to a power supply, you will need an Xbox One S console (left), the power cord (middle) and an electrical outlet (right; Figure 5).

Figure 5. Equipment pieces required to connect the Xbox One S console to a power supply

Connect the Xbox One S console to a power supply by inserting the power cord into the left-most port on the back of the console and inserting the plug end of the cord into a nearby electrical outlet (Figure 6).
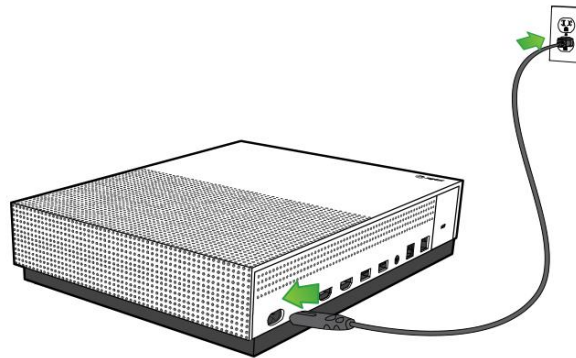
Figure 6. Connecting the Xbox One S console to a power supply

3. Connect the Xbox console to the TV set

Connect the Xbox One S console to a HDMI-compatible TV set using the HDMI cable provided with the console. Connect one end of the HDMI cable into the '**HDMI out'** port (flat with rectangular-shaped openings) on the back of the Xbox console (Figure 7).
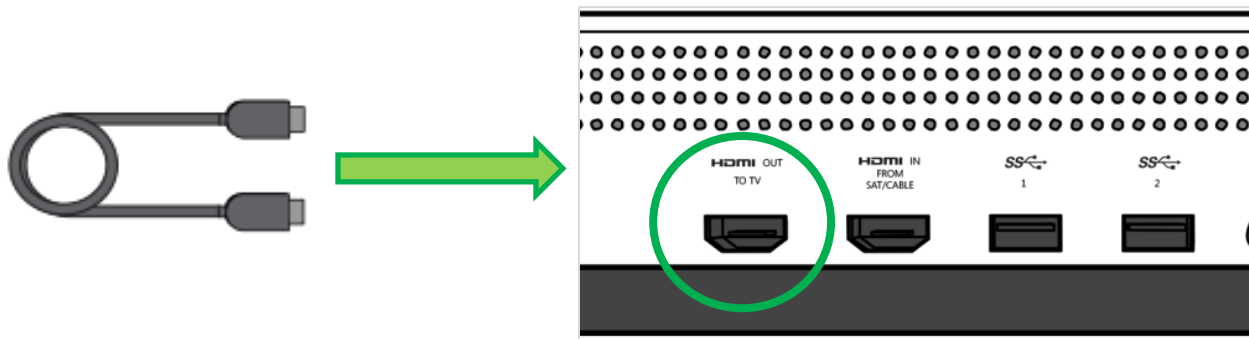
Figure 7. Insert one end of the HDMI cable into the 'HDMI out' port on the console

Next, connect the other end of the HDMI cable to the **'HDMI in'** port on the TV (may be located on the side or back of the TV; see Figure 8). ***Note:** When using the Xbox One S console with the TV, you will need to set the 'source' to HDMI 1, 2, or 3 (depending on which 'HDMI in' port you used on the TV) using the TV remote.

Figure 8. Insert the other end of the HDMI cable into the 'HDMI in' port on the TV set

Getting Started with the Kinect One Sensor

How do I connect the Kinect sensor to the Xbox console?

Now that you have setup the Xbox One S console, it is time to setup the Kinect sensor. Because the Xbox One S console does not ha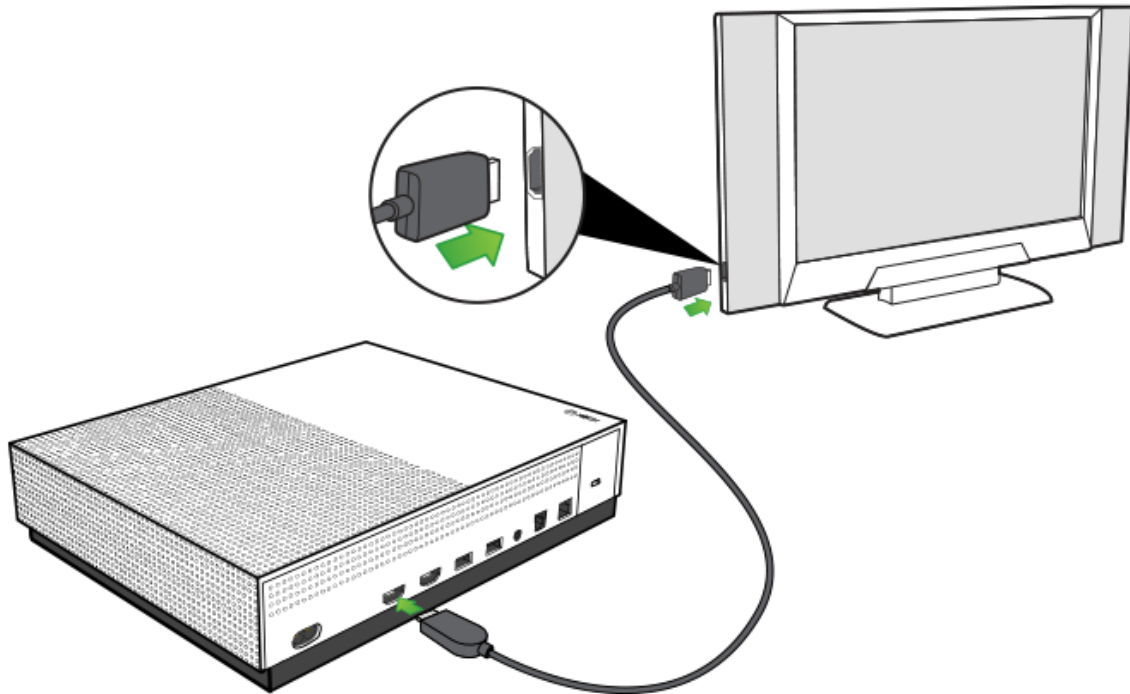ve a port for the Kinect sensor on the back, the sensor and console must connect through a Kinect adapter cable (see Figure 9).
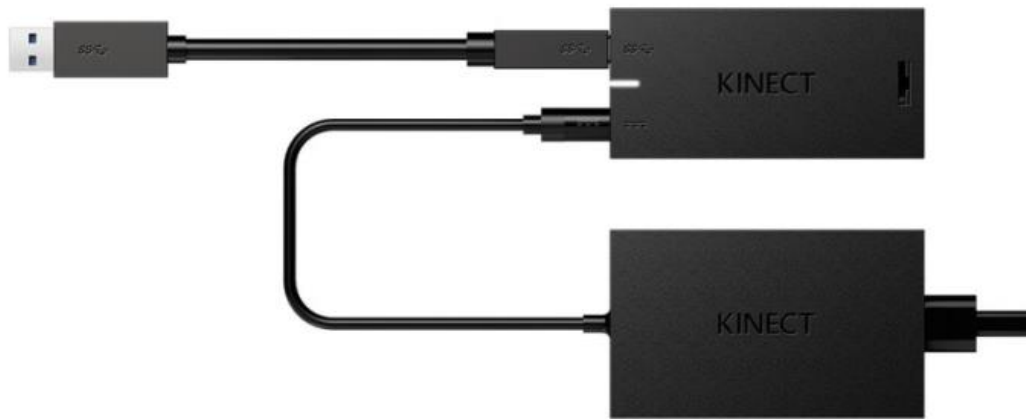

Figure 9. Kinect adapter cable (fully assembled)

To assemble the adapter cable:

*Note: see Figure 10 for a detailed visualization of the assembly process

1. Insert the jack plug connected to the larger/wider rectangular bar (i.e. the bottom rectangle in Figure 10) into the small, circular opening at the end of the smaller/narrower rectangular bar (i.e. the top rectangle in Figure 10).
2. Take the cord with the USB and insert the non-USB end into the square-shaped opening at the end of the smaller/narrower rectagular bar.
3. Take the cord with the standard electrical plug and insert the other end into the opening at the end of the larger/wider rectangular bar.
4. Insert the USB cable into the first USB port on the back of the Xbox console.
5. Insert the end of the Kinect sensor cable into the opening on the narrower/smaller bar of the adapter cable (this will be the only remaining opening and will look similar to a staircase).
6. Now that the adapter cable is assembled and connected to both the Xbox One S console and the Kinect sensor, insert the plug on the assembled adapter cable into a nearby electrical outlet.
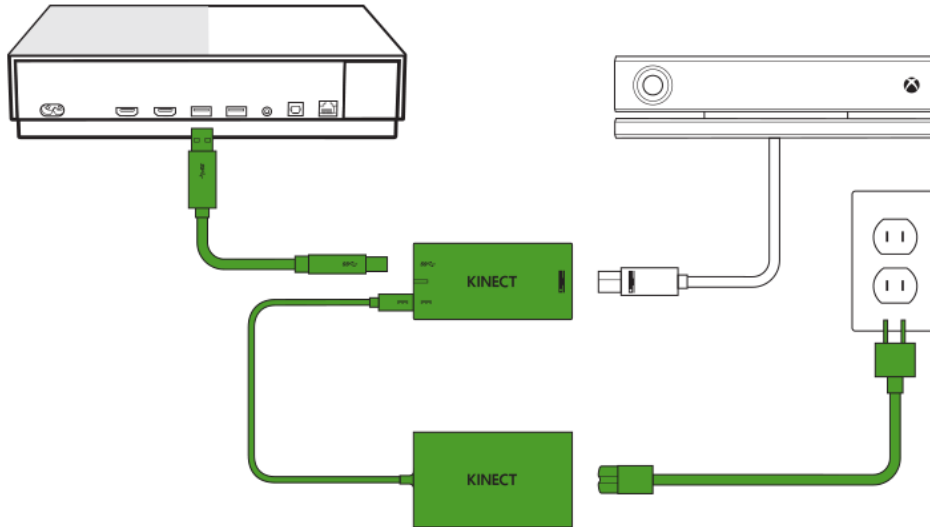
Figure 10. Assemble the adapter cable and connect it to the Xbox console and Kinect sensor

Where and how do you place the Kinect sensor?

Players must stand at least <u>five feet</u> back from the sensor. The placement of the Kinect sensor is important (see Figure 11 and 12). Incorrect placement can affect the sensor's ability to function, which may impact the gaming experience.

The Kinect sensor must be placed:

- Off the floor, at a minimum height of two feet and a maximum height of six feet.
- Along the center of the TV (above or below, but within the 2-6 feet range).
- Within nine feet of the console (to accommodate the length of the adapter cable).
- In an area with adequate lighting (to maximize the accuracy of the interaction).
- In an area that is spacious and free of obstacles to accommodate full-body movements (e.g. stretching out both arms).

Figure 11. Correct versus incorrect placement of the Kinect One sensor

PLEASE NOTE: This manual version is specific to the Xbox <u>One S</u> console with Kinect.

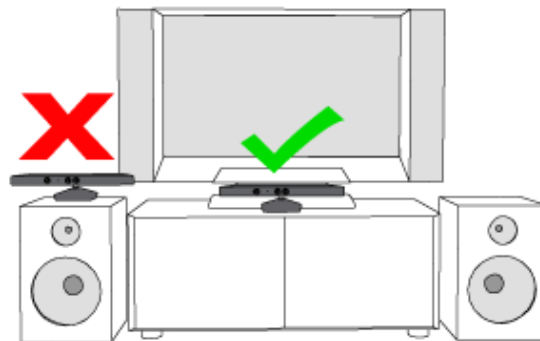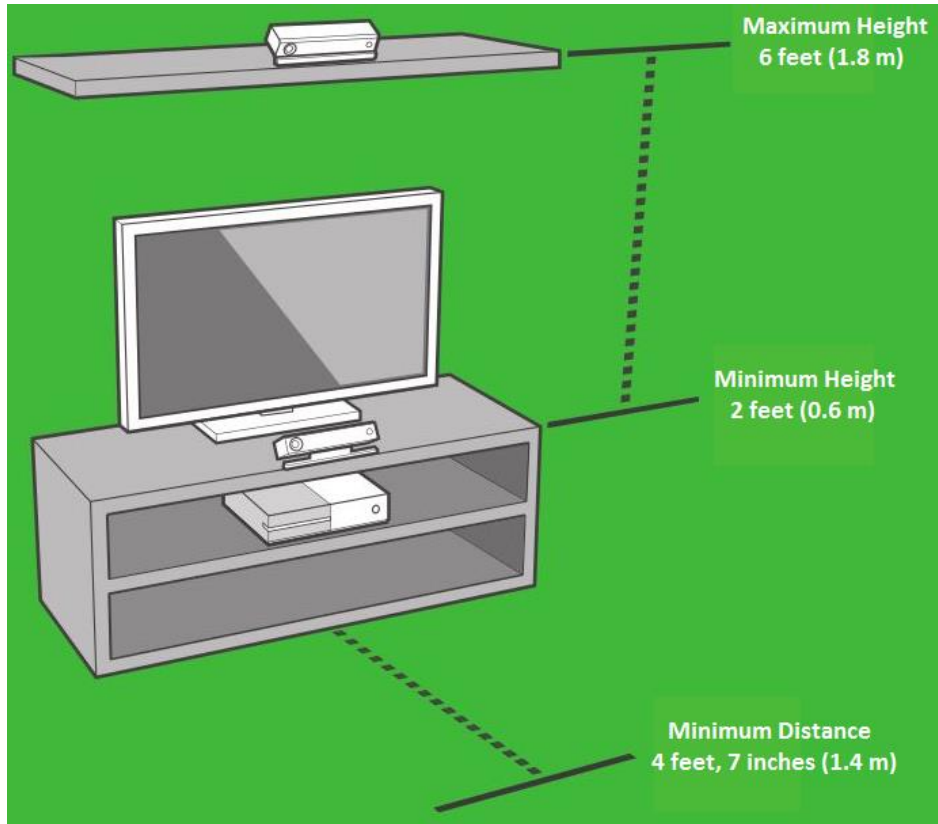*Figure 12.* Height and distance requirements for the Kinect One sensor placement

Using the Xbox One S console

How do I turn the Xbox One S Console on and off?

Turn the Xbox One S console on or off by pressing the power button on the front of the Xbox console, **or** by pressing the power button on the Xbox controller and then pressing the green 'A' button to confirm (see Figure 13).

Figure 13. The power button on the Xbox One S console (left) and Xbox One S controller (right)

How do I set up the Xbox One S console for the first time?
*Note: To set up the Xbox One S console for the first time, you <u>will</u> need a stable internet connection (hard-wired or wireless/Wi-Fi).

To complete the setup process, use the left stick on the controller to navigate over your preferred setup option (e.g. language), and then press the green 'A' button on the Xbox controller to advance through the prompts on the screen.

The Xbox console will eventually prompt you to configure the internet settings (wired or wireless) to connect to Xbox Live. To join Xbox Live, you will need to create a <u>hotmail.com</u> or <u>outlook.com</u> account (*if you do not already have one*) by choosing "I do not have a Microsoft account" with the 'A' button on the controller, and following the prompts on the screen.

Once the Xbox console has connected to the internet, advance through the remaining prompts by pressing the green 'A' button on the Xbox controller.

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How do I navigate the main menu and general features?

To navigate the main menu (also known as the 'Dashboard'), use the left stick on the Xbox One S controller to navigate through the tabs at the top of the screen (e.g. Home, Store, etc.) and the images/squares displayed below each tab. Select options by pressing the 'A' button on the Xbox controller (see Figure 15).
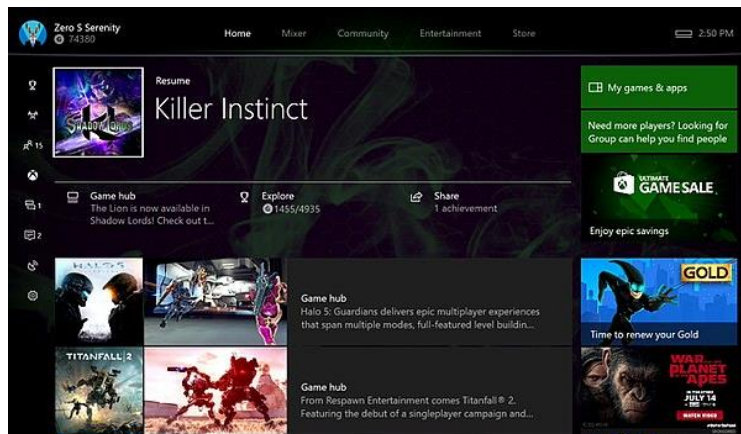
Figure 14. Example of the Xbox One interface (subject to change with system upgrades)

Figure 15. The Xbox One S controller featuring the left stick and green 'A' button

How do I insert or eject an Xbox One Kinect game?

When you are ready to play a game, gently insert the hard-disc (label side facing up) into the disc slot of the Xbox One S console. If you wish to remove a game disc from the Xbox console, press the button on the right side of the disc slot, and the disc will be ejected from the console (Figure 16).

Figure 16. An Xbox One S console, highlighting the disc tray (arrow) and eject button (circle)

Getting Started with Kinect Sports Rivals

What is Kinect Sports Rivals?

Kinect Sports Rivals is a software package (Figure 17) that contains a series of sports-like games (e.g. bowling, climbing, soccer, etc.).

*Note: The bowling game from the Kinect Sports Rivals package was used in the **Kinect Project**, as the rules of the game and the movements required to play are both simple and accessible.

Figure 17. Kinect Sports Rivals game package

How do I create a virtual champion on Kinect Sports Rivals?

To play Kinect Sports Rivals, you will first need to create a 'virtual champion'. This process (which takes about 5 minutes) ensures that the Kinect sensor is functioning properly. Make sure that your volume is turned up high enough to hear the voice commands, which will guide you through the creation process.

a) Creating the body of your virtual champion:
To start, stand in front of Kinect sensor. A voice prompt will ask you to move into a blue 'pillar of light'. Adjust your standing position until you are in the blue pillar of light, which will then turn green (Figure 18). Next, the voice command will ask you to hold your hand in the air to continue with the character creation process.

Figure 18. Correct versus incorrect body positioning in the pillar of light

Next, you will be asked to select the age and sex (Figure 19) of your virtual champion. To do this, reach out towards the Kinect sensor with one hand to bring up the on-screen cursor (a white hand symbol), and use your hand to move the on-screen cursor over your preferred option. To select your preferred option, use your hand to push towards the sensor and pull back.

Figure 19. Selecting the age and sex of your virtual character.

When prompted by the voice commands, walk towards the Kinect sensor. You will see a green light and hear a 'ding' sound when you are close enough.

b) Creating the face of your virtual champion:

Stand close to the Kinect sensor and position your head within the 'guide area', which will change from blue to green (Figure 20). You may need to crouch or sit in a chair. Once your head is correctly positioned, please remain still until the voice command prompts you to raise your hand to continue creating your avatar.

Figure 20. Incorrect versus correct head positioning within the guide area

Next, look towards the Kinect sensor. While following the voice prompts, adjust your head position to align with the guide lines on the screen. You will be asked to

line up with guide lines on the left, right, forward, up and down. Once you are correctly aligned, the blue lights will turn green (Figure 21). Hold your head in place until the system prompts you to continue. Take a step back from the Kinect to finish.
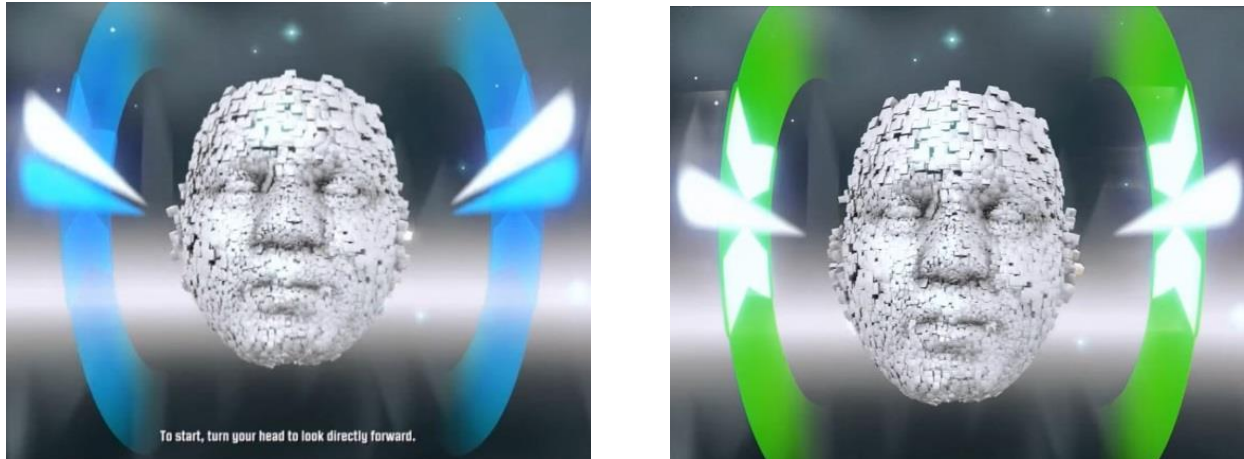

Figure 21. Incorrect vs. correct head positioning within the guide lines

How do I setup the Kinect Sports Rivals bowling game?

Step 1: Once the game launches, use the left stick on the Xbox controller to highlight the 'play' button. Press the green 'A' button on the controller to select it.

Figure 22. Kinect Sports Rivals initial game launch screen

Step 2: Use the left stick on the Xbox controller to highlight the character on the right side, and then press 'A' on the controller to select it.

Figure 23. Kinect Sports Rivals character choice screen

Step 3: Use the left stick on the game controller to highlight the "Quick Play" option from the Main Menu, and then press 'A' on the controller to select it.
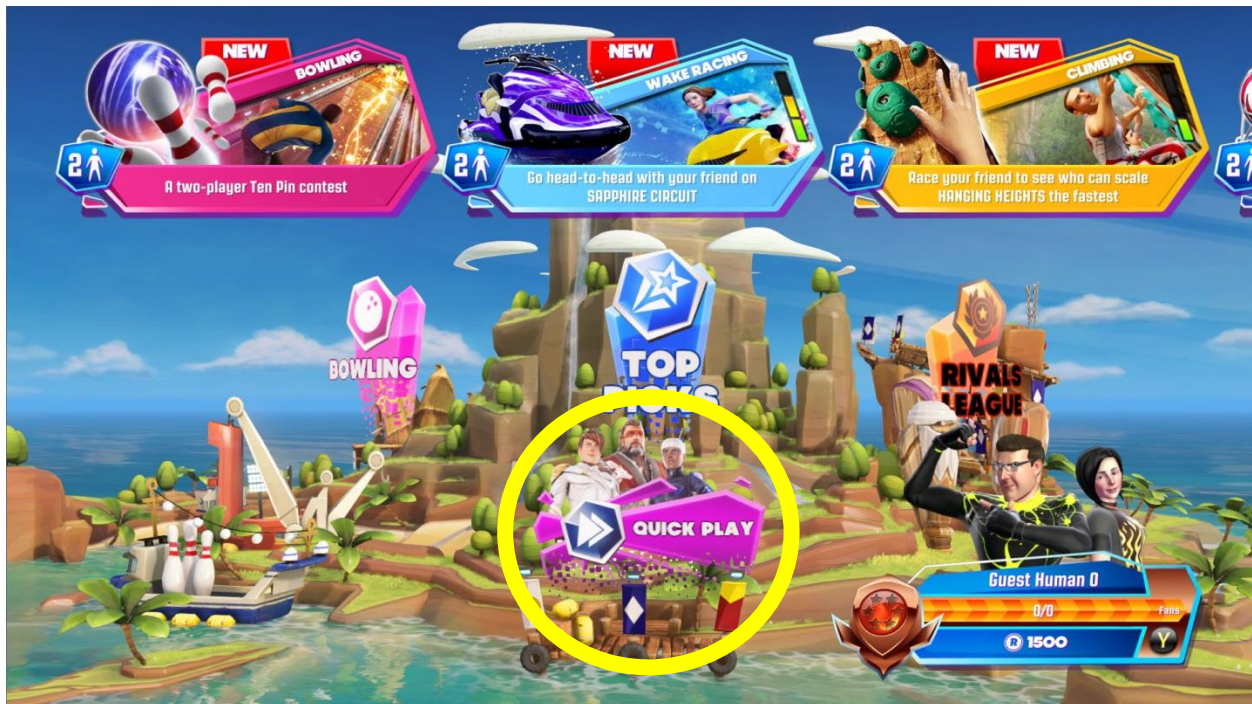
Figure 24. Kinect Sports Rivals main screen

Step 4: Use the left stick on the Xbox controller to highlight the game you wish to play (e.g. bowling). Press the 'A' button on the Xbox controller to select it.

Figure 25. Kinect Sports Rivals game selection screen

Step 5: Set the number of players to **<u>four</u>** by moving the left stick on the Xbox controller over top of the option and then pressing the 'A' button on the controller to select it.

Figure 26. Kinect Sports Rivals player number selection screen

Teaching and Supporting People with Dementia to Use Xbox Kinect

This section covers methods used in the Kinect Project to setup and run 20-session bowling groups for people with dementia or MCI.

How can I set up Xbox Kinect activities for people with dementia or MCI?

- Host the activity in a room that is familiar to the players.
- Ensure the technology is correctly set up and aligned with the TV.
- Ensure that all wires are tucked away or taped to avoid tripping hazards or the overwhelming appearance of too many wires.
- Ensure that there is adequate floor space for participants to move freely.
- Put a piece of colored tape approximately <u>five feet</u> away from the Kinect sensor to remind participants where to stand.
- Ensure the taped line is correctly aligned with the sensor, to support participant success. To test this, stand at the line and take a couple of practice shots before participants arrive. In the case of the bowling game, the ball should go down the middle of the lane rather than the side. Adjust the taped line as necessary until it is correctly placed.
- Arrange chairs in two parallel lines or in a semicircular fashion (see Figure 27) to enable participants to see the screen and the other players.

Figure 27. The standardized setup used in the Kinect Project

How can group Xbox Kinect activities be introduced to people with dementia?

- The technology should be initially presented in a simple and understandable way. Avoid using jargon or over-detailed information.
- Introduce the activity as a fun and inclusive pastime with minimal focus on winning or losing.
- Emphasize the benefits of the activity (e.g. "Would you like to play bowling today? It's fun!").
- Encourage participants to "give it a try."
- Always offer another activity choice in case someone chooses not to engage with the Xbox Kinect.
- For people who are hesitant about using the technology in a group setting, it may be helpful to first introduce the technology in an individual setting before transitioning to a group environment.
- The activity and instructions should be demonstrated to the entire group at the beginning of each session.
  - The facilitator should verbally and physically demonstrate the steps required to play the game by breaking the task down into procedural steps (e.g. "First, raise your hand above your head to start your turn. Next, reach out to the side and close your hand to pick up a ball. Then, bring your arm back behind you. Finally, swing your arm forward while opening your hand to throw the ball.").
- Once the demonstration is done, encouragement each player one by one to complete a turn (e.g. "Okay, John! Come on down!").
- It may be helpful to encourage more confident players to go first, as this may entice newer and/or hesitant players to try.
- It may also be helpful to encourage other staff members to use the technology in front of the group members, to emphasize mutual learning.

How can people with dementia be taught and supported to use Xbox Kinect?

*Note: People with dementia are diverse and have varying needs and abilities. Everyone learns differently and at different paces. Thus, the teaching and support approaches described in this manual may need to be adapted to suit the individual needs of each player.

- Break the movement sequence down into steps (e.g. "First, raise your hand above your head to start your turn. Next, reach out to the side and close your hand to pick up a ball. Then, bring your arm back behind you. Finally, swing your arm forward while opening your hand to throw the ball").

- Provide additional instructions as often as required by each participant to support learning and player success.

- Provide simple verbal instructions (e.g. "Raise your arm a bit higher").

- Slowly demonstrate the moves required to play by acting them out (e.g. reaching to the side; Figure 28) and encourage the person to follow along.

- If a person is still having difficulty despite the use of verbal or gesture instructions, guide them through the activity by using light physical guidance (e.g. placing a hand over theirs).

- Personalize instruction approaches based on each person's skills and abilities (e.g. some people may respond better to words than gestures).

- As each participant becomes more competent with the technology and game, gradually reduce the amount of instruction provided (e.g. some players may only need to be provided with the first step and can then complete the rest of the task on their own).

- Offer positive encouragement regardless of the outcome (e.g. "Good try!").

Figure 28. Instructing a player to play bowling on Xbox One S with Kinect using gesture prompts

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Resources & Additional Information

Where can I go if I need more help or have questions?

If you have any questions about this manual or about running Xbox bowling groups for people with dementia or MCI, please contact the authors:

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