

A Adam, Rouilly

AR503

Enhanced Digital Eye

Examination / Retinopathy Trainer

Instruction Manual



Thank you for purchasing this **AR503 Enhanced Digital Eye Examination/Retinopathy Trainer**.

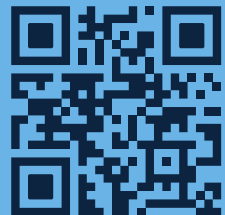
Please read this instruction manual carefully and retain it for future reference.

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Let us walk you through it
Watch the video now

Visit our YouTube Channel:
<https://www.youtube.com/AdamRouilly>



Safety and Precautions



The digital images of eye conditions supplied are the copyright of Adam,Rouilly Limited. They are for sole use with the this AR503 Enhanced Digital Eye Examination Trainer.

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The trainer contains sensitive electronic parts. Do not store near heat or where it may experience extremes in temperature, humidity or magnetic fields.



Use either the power adaptor supplied or other suitable low volt USB-C type adaptors.



Use only 4x AA batteries (not included) in the battery compartment as indicated. Do not attempt to use any other type or size of battery. Other battery sizes may damage the simulator, and invalidate your guarantee.



During use, the head must be inserted into the shoulder base.



Use only fingers or suitable stylus (not supplied) on the touchscreen. Other objects could scratch or damage the touchscreen and invalidate your guarantee.



Do not use the adaptor if the low voltage cable is damaged. The cable cannot be repaired, the adaptor must be replaced.



Do not power down and leave or store the trainer with batteries still installed for prolonged periods. Always remove batteries before storage.



The trainer contains no user serviceable parts. Do not attempt to open or disassemble the trainer. Doing so could cause damage and will invalidate your guarantee.



Do not exert excessive force on the buttons or place the trainer upside down. Doing so could cause damage and will invalidate your guarantee.



For best clarity of display of the conditions, we recommend setting the ophthalmoscope light to "off".



Re-chargeable batteries may be used to power the trainer. Please note however that the mains adaptor will not re-charge batteries.



Please treat the simulator with the same care you would a patient.

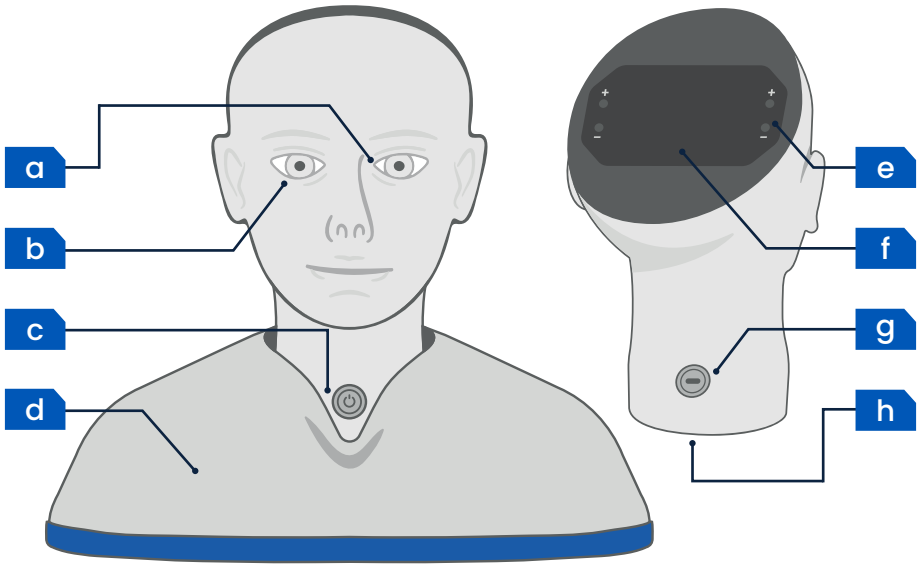
Parts

Front

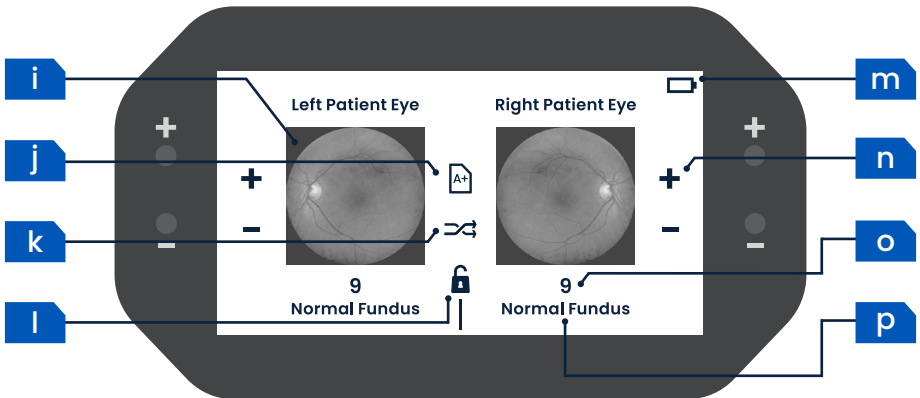
(Shown inserted into shoulder base)








Rear

(Shown removed from shoulder base)



Touchscreen Interface



- a** Left Patient Eye
- b** Right Patient Eye
- c** Power Switch (with Blue Indicator Light)
- d** Removable Shoulder Base
- e** Eye Condition Up (+) and Down (-) Buttons
- f** Touchscreen User Interface
- g** USB-C Low Voltage Power Jack
- h** Battery Compartment (on Base) for 4x AA Batteries (Not Included)
- i** Eye Condition Preview / Condition Library
- j** Exam Mode ()
- k** Random Mode ()
- l** Sync Lock ()
- m** Power Indicator - Mains () or Batteries (  )
- n** Eye Condition Up (+) and Down (-)
- o** Eye Condition Number / Numerical Entry
- p** Eye Condition Name

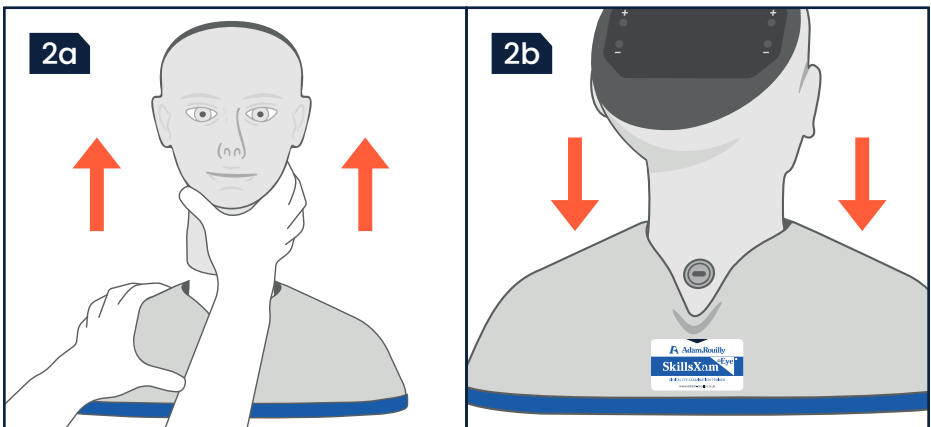
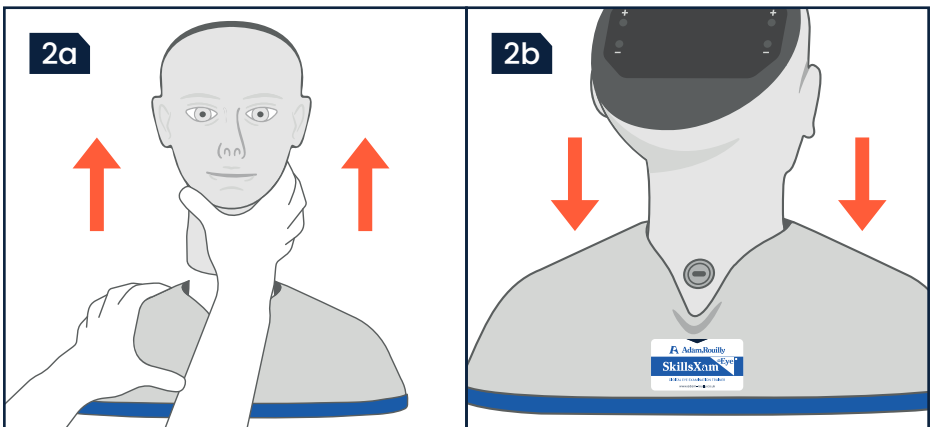
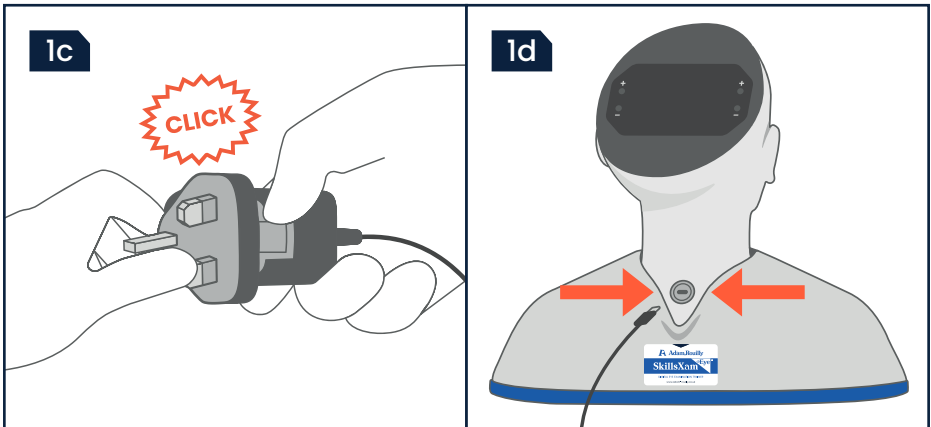
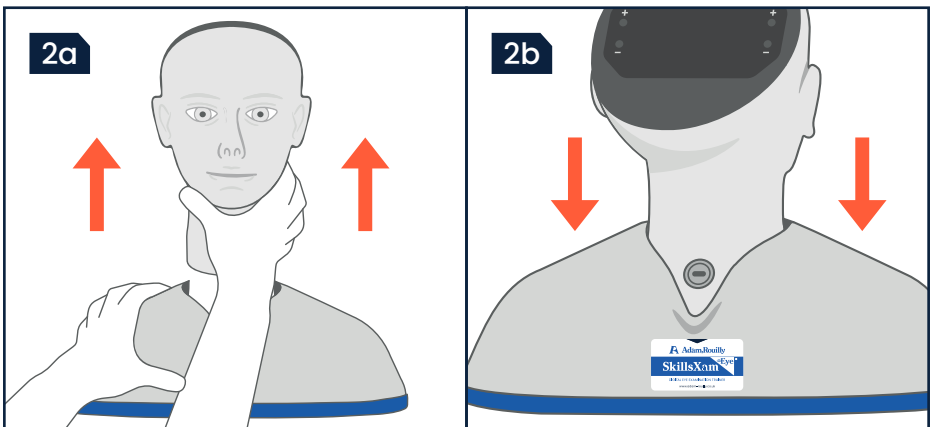
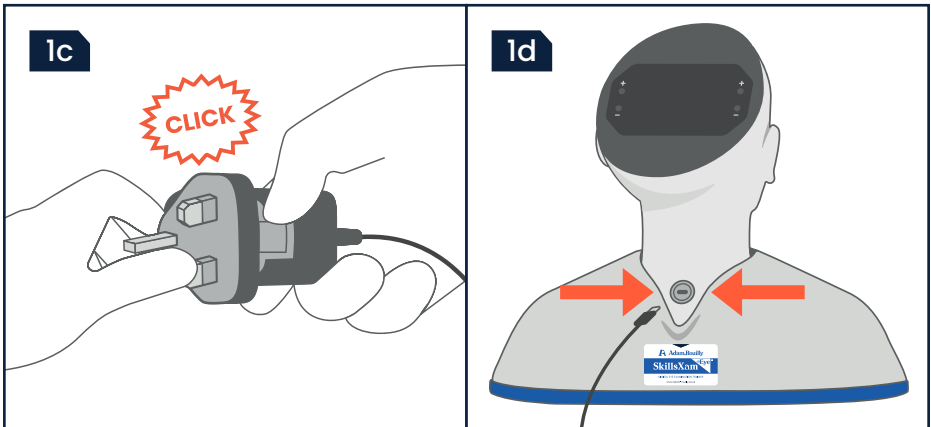
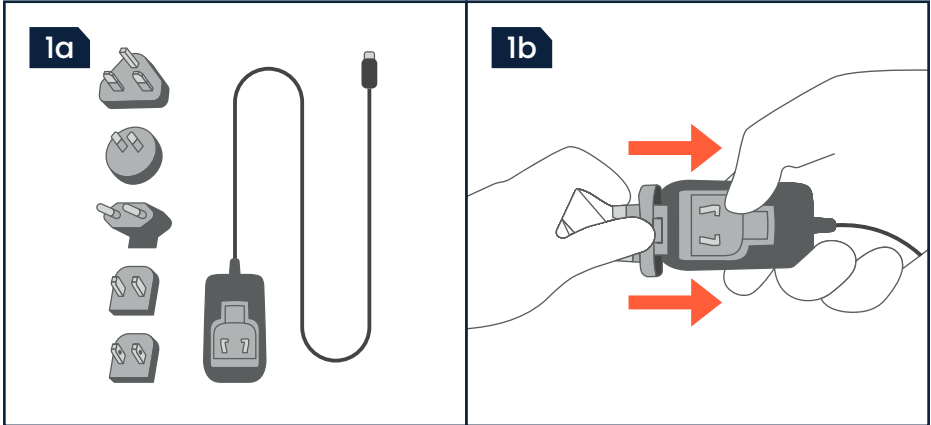
Includes

- S402/9 Rigid Carrying Case
- S403/7 Blue Battery Compartment Opening Tool
- USB-C Mains Adaptor with Worldwide Plug Fixings



If you require replacement parts please contact our Sales Department, use product codes where applicable.

Before Use



Using the Included Power Adaptor


Ensure the work area is clean and dry. Place the trainer on a stable, flat surface.

- 1a** Before first use select the appropriate plug fixing for your local mains supply from those included.
- 1b** Insert the plug fixing into the adaptor with the large catch at the base of the adaptor.
- 1c** Align the small rectangular groove on the top of the fixing and press this into the adaptor so that it clicks into the spring lug.
- 1d** Plug the low voltage cable from the adaptor into the power jack at the rear of the simulator.

The simulator is now ready for use.

Removing the Shoulder Base

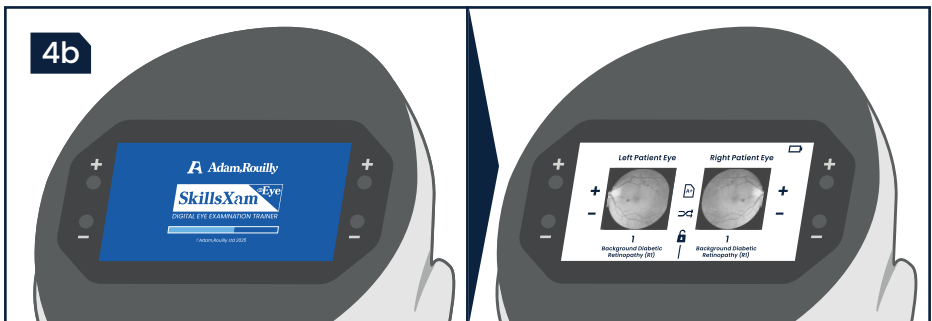
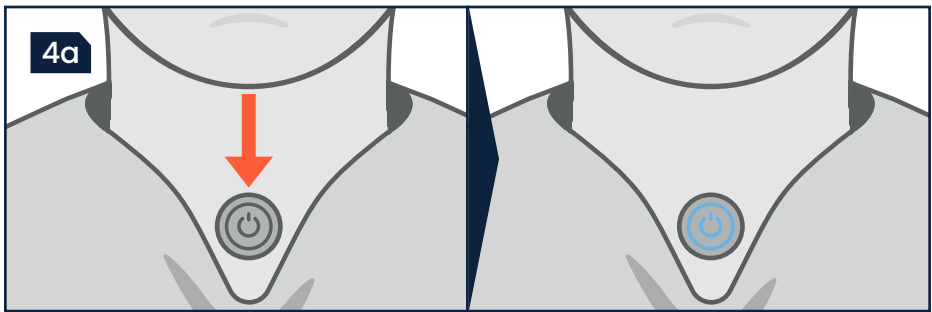
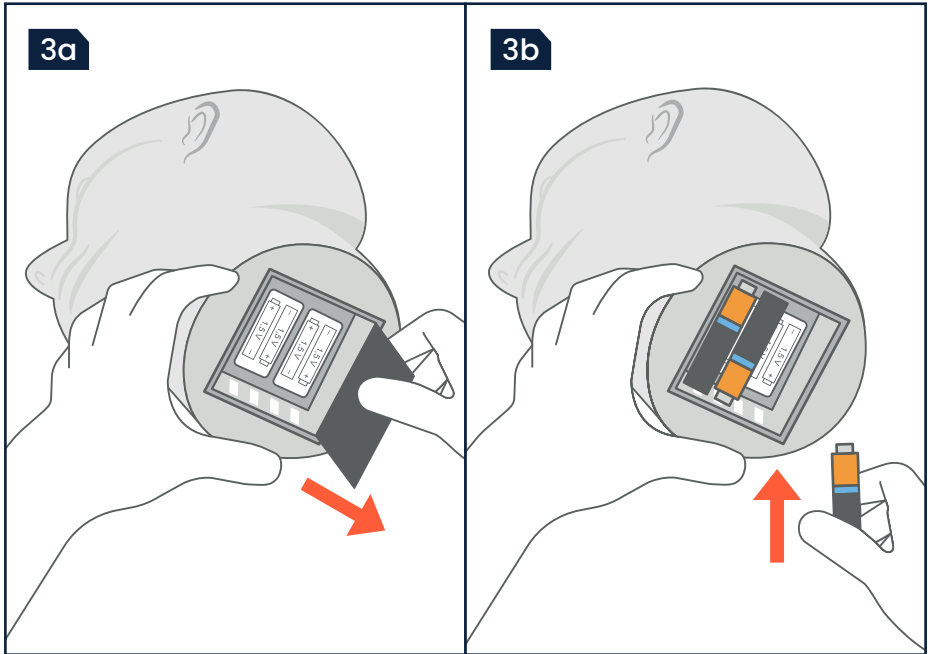
The head may be removed from the base to access the battery compartment.

- 2a** To remove the base, place one hand firmly on the shoulder base. Place the other hand firmly under the chin to grasp the head, and pull up.
- 2b** To reinstall the head, reverse the procedure. Ensure that the power jack aligns with the black arrow  on the label at the rear of the shoulder base.



During use, the head must be inserted into the shoulder base.

Before Use



Using Battery Power

Alternatively, the trainer may be powered by 4x AA batteries (not included).



Use only 4x AA batteries (not included) in the battery compartment as indicated. Do not attempt to use any other type or size of battery. Other battery sizes may damage the simulator, and invalidate your guarantee.



Do not power down and leave or store the trainer with batteries still installed for prolonged periods. Always remove batteries before storage.



Re-chargeable batteries may be used to power the trainer. Please note however that the mains adaptor will not re-charge batteries.

3a

Open the battery compartment at the base of the simulator using the tab on the compartment door.

3b

Install 4x AA batteries (not included) as indicated in the battery compartment. Refit the compartment door.

The simulator is now ready for use.

Powering On

4a

Power on the model using the power button. The blue LED indicator light will illuminate.



If the model fails to power on, check the batteries are fitted correctly and have sufficient power, or check the low voltage cable is attached correctly and the mains supply is turned on.

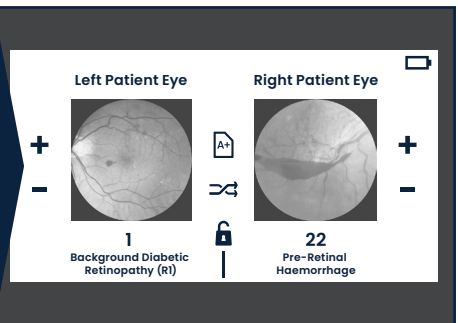
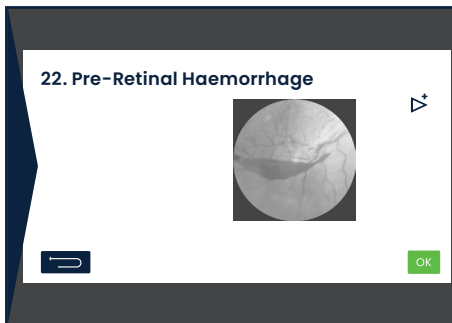
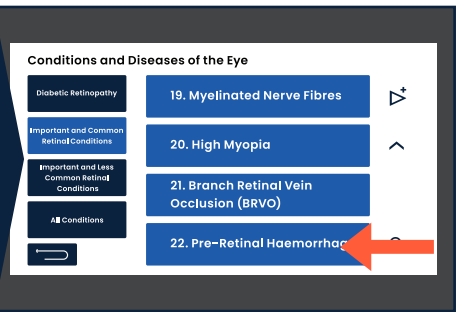
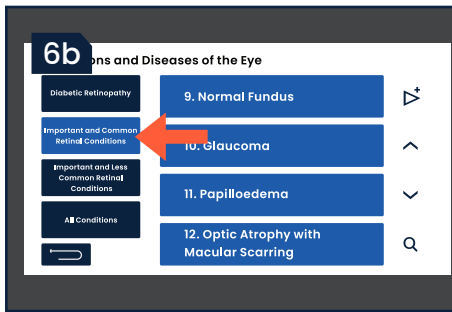
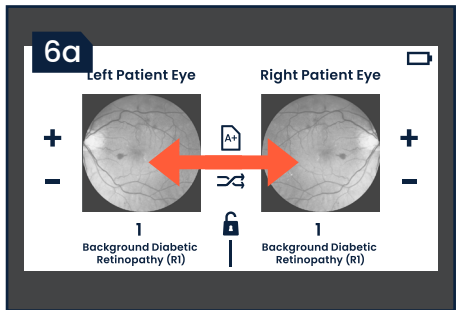
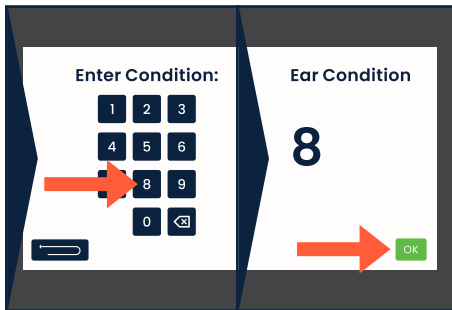
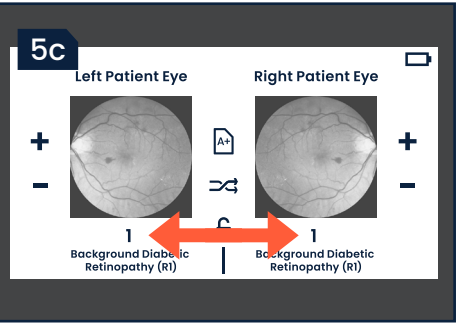
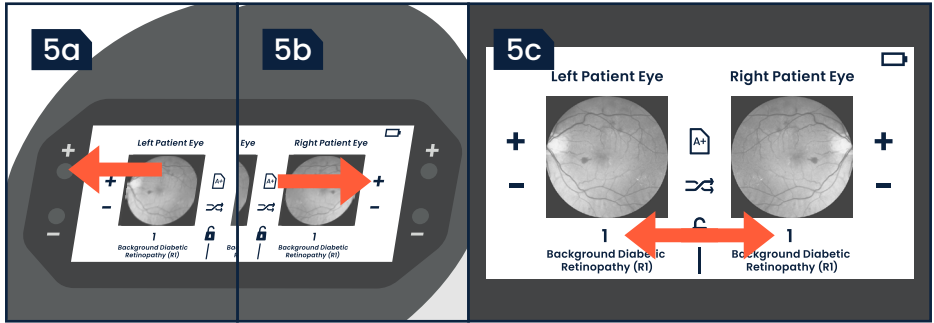
4b

After a short delay the blue welcome screen will display, followed by the home condition display screen.



Whenever the model is powered off and then on again, the eye condition will automatically default to Condition 1.

Before Use



Selecting a Condition

Conditions are easily navigable and selected using any of the following methods:

- 5a** Use the physical left or right eye condition Up (+) and Down (−) buttons.
- 5b** Tapping the left or right eye condition Up (+) and Down (−) buttons on screen.
- 5c** Tap the number under either the left or right eye condition. The numerical entry screen will display. Use the numerical keypad to enter the number of the desired condition, from 1 to 36. Tap the **OK** button.

Using the Condition Library

The Condition Library categorises cases and allows for previewing of conditions before they are displayed inside the simulated eyes.

Full condition information and their respective categories are listed on **Page 24** of this manual.

- 6a** To access the Condition Library, from the Home Condition Display screen tap on the either the left or right patient eye condition, depending which side you wish to change.
- 6b** The Condition Library lists categories as Diabetic Retinopathy, Important and Common Retinal Conditions and Important and Less Common Retinal Conditions. "All Conditions" lists all conditions in numerical order, 1 to 36. Tap a classification to view the conditions contained within, e.g. Diabetic Retinopathy.

The selected classification is highlighted light blue. Tap the up ▲ and down ▼ arrows to scroll through the list of conditions within this category. When the down arrow disappears, the end of the list has been reached.

To select a condition, simply tap its name. The Condition Screen will display the name of the condition, and the image. Tap **OK** to display this inside the simulated eye, or tap the **←** button to return to the previously viewed classification in the Condition Library.

Once a condition is being displayed, note that all conditions display in numerical order, regardless of category.

Before Use

7a Conditions and Diseases of the Eye

- Diabetic Retinopathy
- Important and Common Retinal Conditions
- Important and Less Common Retinal Conditions
- All Conditions

1. Background Diabetic Retinopathy (R1)
2. Pre-Proliferative Diabetic Retinopathy (R2)
3. Proliferative Diabetic Retinopathy (R3)
4. New Vessels on Optic Disc (R3)

Search: GLAU

Glaucoma

10. Glaucoma

OK

Left Patient Eye

10
Glaucoma

Right Patient Eye

1
Background Diabetic Retinopathy (R1)

8a

Left Patient Eye

1
Background Diabetic Retinopathy (R1)

Right Patient Eye

1
Background Diabetic Retinopathy (R1)

Left Patient Eye

1
Background Diabetic Retinopathy (R1)

Right Patient Eye

1
Background Diabetic Retinopathy (R1)

9a

Left Patient Eye

1
Background Diabetic Retinopathy (R1)

Right Patient Eye

1
Background Diabetic Retinopathy (R1)

Left Patient Eye

1
Background Diabetic Retinopathy (R1)

Right Patient Eye

1
Background Diabetic Retinopathy (R1)

Left Patient Eye

1
Background Diabetic Retinopathy (R1)

Right Patient Eye

1
Background Diabetic Retinopathy (R1)

10a

Left Patient Eye

22
Pre-Retinal Haemorrhage

Right Patient Eye

1
Background Diabetic Retinopathy (R1)

Left Patient Eye



22
Pre-Retinal Haemorrhage


Right Patient Eye

22
Pre-Retinal Haemorrhage

Using the Condition Library: Search Function

Within the Condition Library, conditions can also be searched for.

7a Tap the  symbol, the search screen will display. Use the on-screen keyboard to search for a term in a condition name. Best search results will automatically populate. If the down arrow  appears there is more than one search result, tap this to see further results. When the down arrow disappears, the end of the list has been reached.

To select a search result, simply tap on the name which will display the Condition Screen. Tap  to display this inside the simulated eye, or tap the back symbol to return to the search results.

Exam Mode

Exam mode hides the name and number of both eye conditions, leaving only the condition image on the home condition display screen during use.

8a To activate, tap the  symbol. The number and name are hidden, and a button shape appears around the  symbol indicating Exam Mode is active.





To deactivate, simply tap the  again.



When Exam Mode is active, Sleep Mode is automatically cancelled and the unit will not power down. For more information, see Sleep Mode on **Page 21**.

Random Mode



Random mode displays conditions in a varied sequence, for both Left and Right patient eyes.


9a To activate, tap the  symbol. A button shape appears around the  symbol indicating Random Mode is active. When the Up () or Down () buttons are tapped or pushed, the next condition number is populated randomly.

To deactivate, simply tap the  again.

Sync Lock

Sync lock displays the last selected condition across both eyes.

10a On the home condition display screen, tap the  symbol. A button shape appears around the  indicating Sync Lock is active. The last selected left or right eye condition will now display for both eyes.

To deactivate, tap  again. The conditions selected prior to Sync Lock activation will display.

Before Use

11a Conditions and Diseases of the Eye

- Diabetic Retinopathy
- Important and Common Retinal Conditions
- Important and Less Common Retinal Conditions
- All Conditions

1. Background Diabetic Retinopathy (R1)
2. Pre-Proliferative Diabetic Retinopathy (R2)
3. Proliferative Diabetic Retinopathy (R3)
4. New Vessels on Optic Disc (R3)

11b Condition Sets

- Set A
- Set B
- Set C
- Set D

EXIT SET

11c

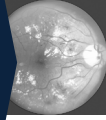
	Left Eye	Right Eye
1	Not assigned	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

SELECT SET

PIN

11d Conditions and Diseases of the Eye

2. Pre-Proliferative Diabetic Retinopathy (R2)
3. Proliferative Diabetic Retinopathy (R3)
4. New Vessels on Optic Disc (R3)
5. Diabetic Maculopathy (M2)



OK

11e

	Left Eye	Right Eye
1	5. Diabetic Maculopathy (M2)	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

	Left Eye	Right Eye
1	5. Diabetic Maculopathy (M2)	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

11f

	Left Eye	Right Eye
1	Not assigned	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

SELECT SET

PIN

11g

	Left Eye	Right Eye
1	Not assigned	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned


SELECT SET









PIN

Custom Sets

Custom sets allow the selection of up to 10 specific conditions in any order, for both left and right patient eyes, for focused teaching or assessments. There are four custom sets available.

When a Custom Set is Active, the Custom Sets are stored even when the unit is in Sleep Mode, or is powered down.

- 11a** At least one and a maximum of 10 conditions can be selected. To assign conditions to a custom set, from the Condition Library tap the  symbol.
- 11b** The Custom Sets screen displays – tap the desired custom set A, B, C or D.
- 11c** The Set Assignment screen displays for the specific set. The Left Patient Eye is always selected by default – if you wish to assign conditions to the Right Patient Eye, simply tap the **Right Eye** button at the top. If you do not wish to assign any conditions to a specific Right or Left patient eye, simply leave this side blank.

To assign a condition to a position, tap that position.
- 11d** The Condition Library opens once more, where a specific condition can be browsed for as in **6b Using the Condition Library**. Tap the condition, tap  and the selected condition now displays in the desired position.
- 11e** If you wish to move the position of that condition, use the up  or down  arrows which display to the right of the condition assignment position. To delete the condition, tap the  symbol.
- 11f** To clear the whole set, tap the large  symbol on the left.
- 11g** To make the set active, Tap . The model will now display those conditions in the assigned order as the Eye condition Up () and Down () buttons are used.

Before Use

12a

	Left Eye	Right Eye
1	Not assigned	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

Buttons: OK, SELECT SET, PIN, back arrow

12b

Give the PIN code

1	2	3
4	5	6
7	8	9
0	⌫	

1234

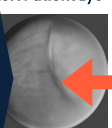
Buttons: back arrow, OK

12c

	Left Eye	Right Eye
1	Not assigned	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

Buttons: OK, SELECT SET, PIN, back arrow

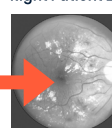
Left Patient Eye



27 Malignant Melanoma

Right Patient Eye

Set A:1



5 Diabetic Maculopathy (M2)

Give the PIN code

1	2	3
4	5	6
7	8	9
0	⌫	

Buttons: back arrow, OK

13a

	Left Eye	Right Eye
1	Not assigned	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

Buttons: OK, SELECT SET, PIN, back arrow

13b

Give the PIN code

1	2	3
4	5	6
7	8	9
0	⌫	

1234

x5

Buttons: back arrow, OK

14a

Give the PIN code

1	2	3
4	5	6
7	8	9
0	⌫	

0000

Buttons: back arrow, OK

14b

Give the PIN code

1	2	3
4	5	6
7	8	9
0	⌫	

0000

Buttons: back arrow, OK

Custom Sets: Assigning a Pin

An optional PIN number can be assigned to prevent unwanted exit from a Custom Set, for example during an examination.


12a To use a PIN, ensure then desired Custom Set Assignment screen is being displayed. Tap the blue **PIN** button.

12b Using the numerical entry pad, enter a 4 digit Pin. Tap **OK**. The PIN is now assigned to the Custom Set.

12c Tap **OK** to display the set. To exit the set, tap the image of the condition. The same correct PIN must be entered, then tap **OK** before the Custom Set Assignment Screen will be displayed once more.

Custom Sets: Removing a Pin

13a To remove a PIN number associated to any set, navigate to the Custom Set Assignment Screen. Tap PIN button.

13b Enter the PIN as set before. Then tap the delete  key 5 times then tap **OK**. The PIN is now removed.

Custom Sets: Forgotten Pin

If the Custom Set PIN has been forgotten, the universal reset code can be entered to clear the PIN.

14a Tap the condition image to exit the set. Enter in the universal reset code as follows:

0000760423



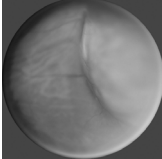
Note that the last six digits are not visible on the screen during entry.

14b Tap **OK**. The PIN will have been cleared.

Before Use

15a

Left Patient Eye



27
Malignant Melanoma

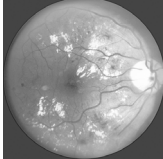
Set A: 1

A+

↔

🔒

Right Patient Eye



5
Diabetic Maculopathy (M2)

15b

Enter the PIN code to enter Exam mode:

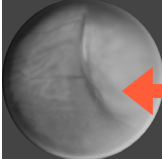
1	2	3
4	5	6
7	8	9
0	⌫	

1234

⏪
OK

16a

Left Patient Eye



27
Malignant Melanoma

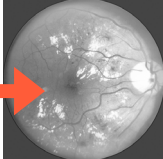
Set A: 1

A+

↔

🔒

Right Patient Eye



5
Diabetic Maculopathy (M2)

16b

Enter the PIN code

1	2	3
4	5	6
7	8	9
0	⌫	

←

⏪
OK

16b

Set A	Left Eye	Right Eye
1	Not assigned	Not assigned
2	Not assigned	Not assigned
3	Not assigned	Not assigned
4	Not assigned	Not assigned
5	Not assigned	Not assigned
6	Not assigned	Not assigned
7	Not assigned	Not assigned
8	Not assigned	Not assigned
9	Not assigned	Not assigned
10	Not assigned	Not assigned

⏪
EXIT SET

16c

Set A

Set B

Set C

Set D

16c

Conditions and Diseases of the Eye

Diabetic Retinopathy	1. Background Diabetic Retinopathy (R1)
Important and Common Retinal Conditions	2. Pre-Proliferative Diabetic Retinopathy (R2)
Important and Less Common Retinal Conditions	3. Proliferative Diabetic Retinopathy (R3)
All Conditions	4. New Vessels on Optic Disc (R3)

⏪
EXIT SET

Custom Sets: Exam Mode

When a Custom Set is active, Exam Mode can be utilised as in normal operation to hide the condition name and number.

15a When a Custom Set is Active, Simply tap the  symbol.

15b If a PIN has been set, the same PIN must be entered to active and deactivate Exam Mode. If the PIN is forgotten, see **14a Custom Sets: Forgotten Pin**.





Note that in order to exit a Custom Set when Exam Mode is active, Exam Mode must be deactivated first.

Exiting Custom Sets

16a To exit a custom set, tap the image of the condition. If a PIN has been set, this must be entered when prompted.

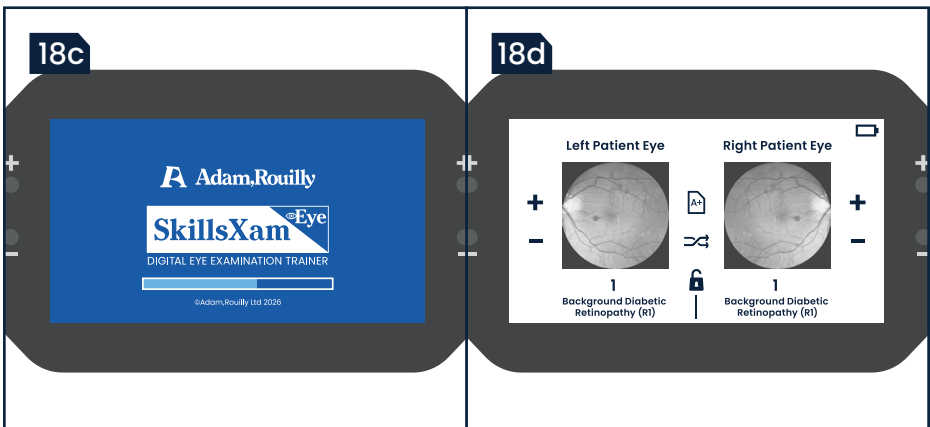
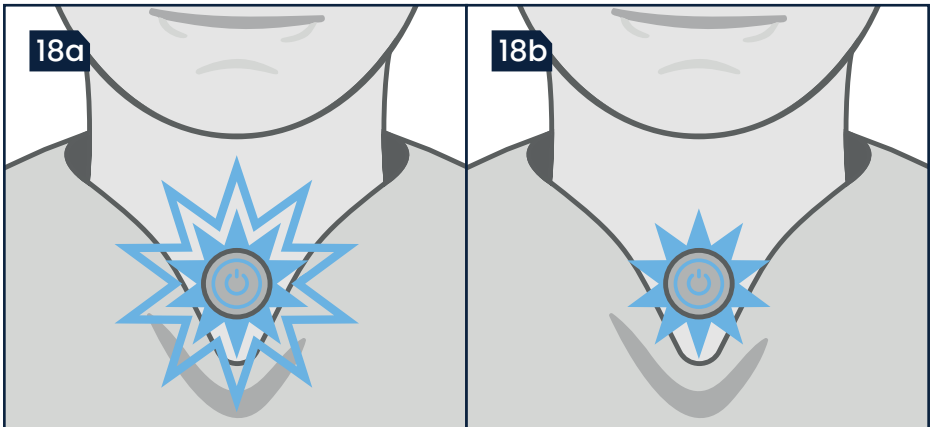
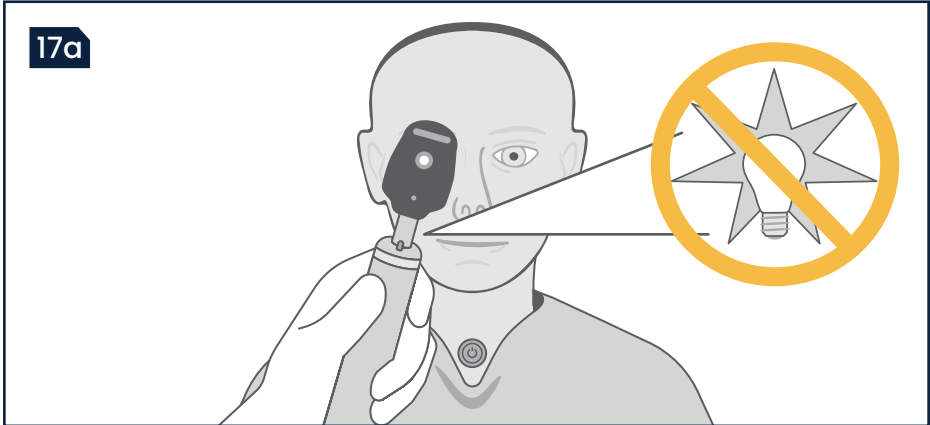
16b Tap the  button.

16c Tap the  button. The Condition Library screen is displayed – conditions can be browsed here once more, or tap the  button and the previously selected conditions will display.



Note that in order to exit a Custom Set when Exam Mode is active, Exam Mode must be deactivated first.

During Use



Ophthalmoscope Use

17a An ophthalmoscope (not included) may be used to view each condition.





For best clarity of display of the conditions, we recommend setting the ophthalmoscope light to “off”.

Sleep Mode

Sleep mode conserves power when the model has not been used for some time.



Note that utilising Exam Mode  (**Page 13**) automatically deactivates the Sleep Mode from functioning e.g. during a test scenario. Energy/battery use will therefore increase when Exam Mode is active.

Sleep Mode operates differently depending on which power source is used and Exam Mode  is not activated. After approximately 10 minutes:

18a

On battery power, the main touch screen and internal eye displays power down. The blue power LED flashes quickly.

18b

On low voltage power USB-C power, the main touchscreen and internal backlights turn off, but the screens remain powered. The blue power LED flashes slowly.

To wake, simply tap the Condition Up (+) or Down (–) buttons.

18c

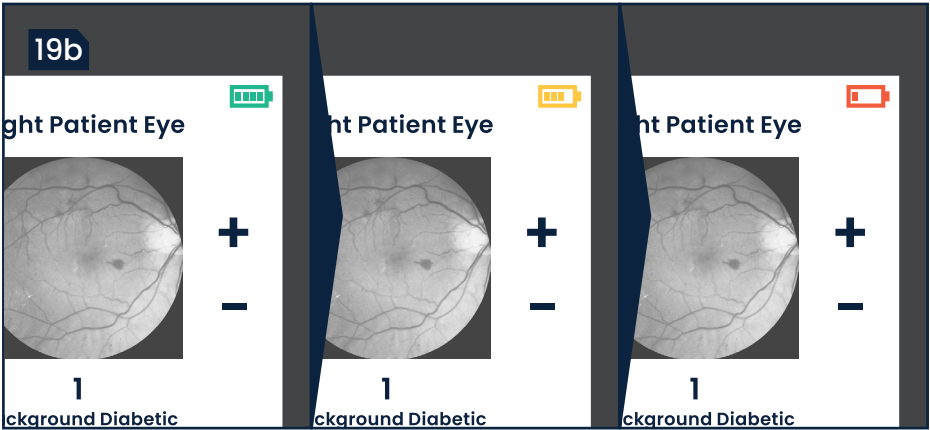
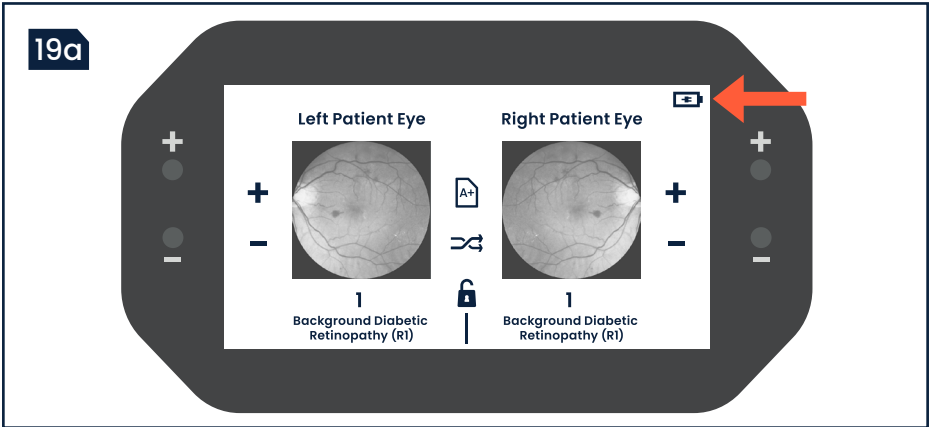
On battery power there is a slightly longer wake time – the welcome screen will show briefly.

18d

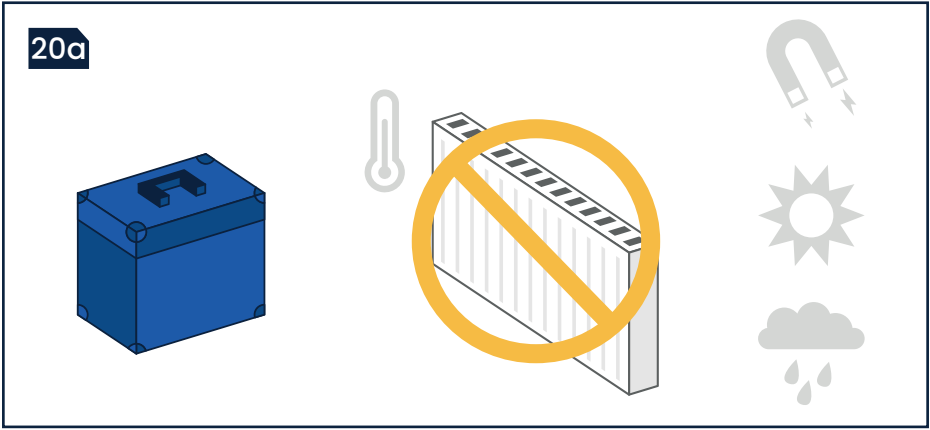
On low voltage power USB-C power, there is a shorter wake time.




After exiting sleep mode, the device will display the last used Condition or Custom Set.






After Use



Power Indication

19a If USB-C power is being used the  symbol is displayed.

19b If battery power is being used, the indicator displays approximate battery capacity:

-  Indicates full battery power
-  Indicates sufficient battery power
-  Indicates low battery power. Replace the batteries as described on **Page 9**.



Do not power down and leave or store the trainer with batteries installed for prolonged periods. Always remove batteries before storage.

Using the Supplied Rigid Carrying Case

20a After use, or before transportation, the model should be placed with the head installed in the shoulder base and **upright** in the supplied **Rigid Carrying Case**.



The trainer contains sensitive electronic parts. Do not store near heat or where it may experience extremes in temperature, humidity or magnetic fields.

Safety in Training, Safety in Practice

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