Adam,Rouilly

SERVING MEDICAL EDUCATION WORLDWIDE

AR403/AR403-B DIGITAL EYE EXAMINATION/RETINOPATHY TRAINER

Instruction Manual

Thank you for purchasing this **AR403 Digital Eye Retinopathy Trainer.**

Adam,Rouilly's already successful AR303 Eye Retinopathy Trainer has been completely redesigned to use the latest in high resolution digital screen technology - enhancing realism and the training experience.

Our new **AR403 Digital Eye Retinopathy Trainer** includes **36 diabetic, common and less common retinal conditions** to offer excellent 'hands-on' experience in examination of the eyes and the use of an ophthalmoscope.

Features

- Simple to set up and use
- High resolution digital display
- Easy to use, individual digital control for each eye
- Examination cover to hide displays of condition numbers
- Battery or worldwide mains power compatible
- Sleep mode to conserve power

Contents

Safety and Precautions

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

Use only the low-voltage power mains adaptor supplied. Use of other adaptors may damage the simulator, and invalidate your guarantee.

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 model, 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.

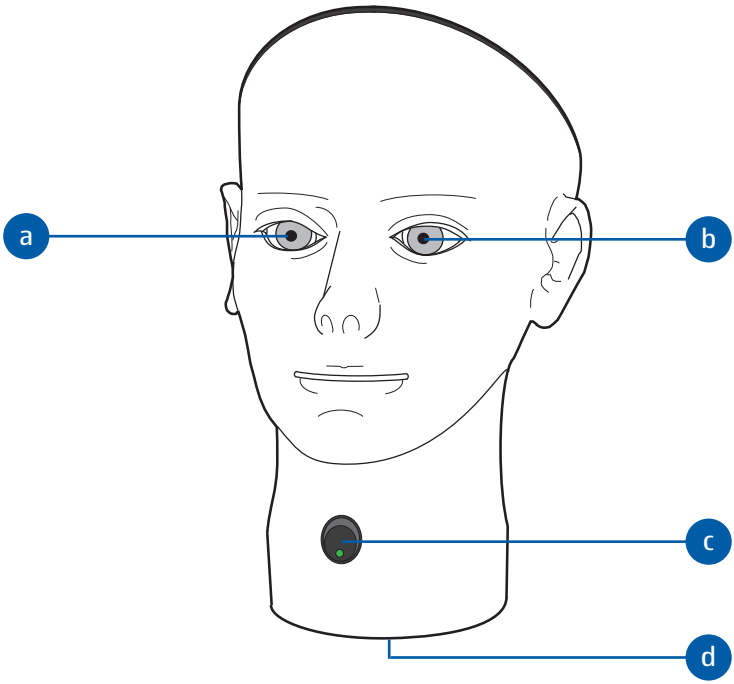
Do not exert excessive force on the buttons or place the trainer upside down. Doing so could cause damage and will invalidate your guarantee.

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

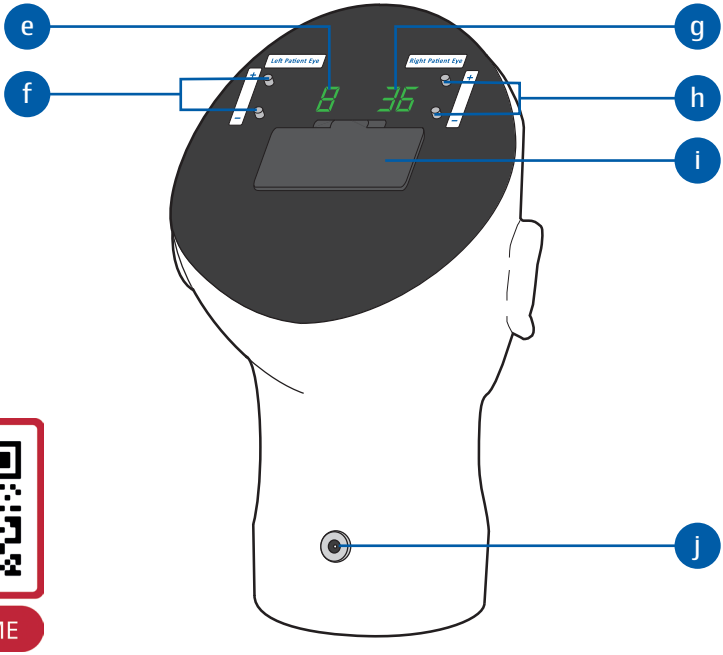
Please treat the simulator with the same care you would a patient.

Parts

Front



Rear



SCAN ME

a Right patient eye

b Left patient eye

c Power switch (with green indicator light)

d Battery compartment (on base) for 4x AA batteries (not included)

e Left eye LED condition number indicator

f Left Eye Up (+) and Down (-) buttons

g Right eye LED condition number indicator

h Right Eye Up (+) and Down (-) buttons

i Examination cover

j Low voltage power jack

Supplied With

Low voltage power adaptor with world plug fixings

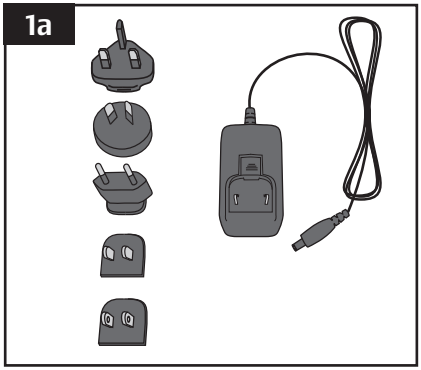
S403/7 BLUE BATTERY COMPARTMENT OPENING TOOL

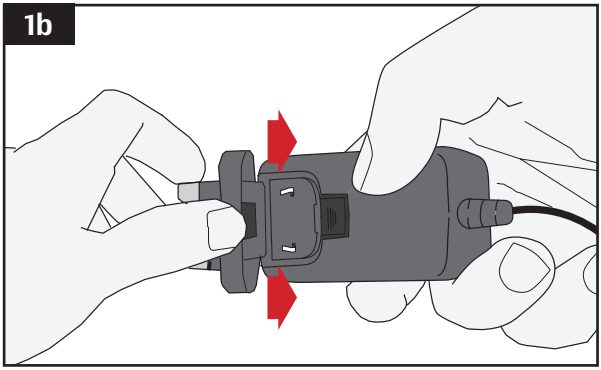
S403/3 RIGID CARRY CASE

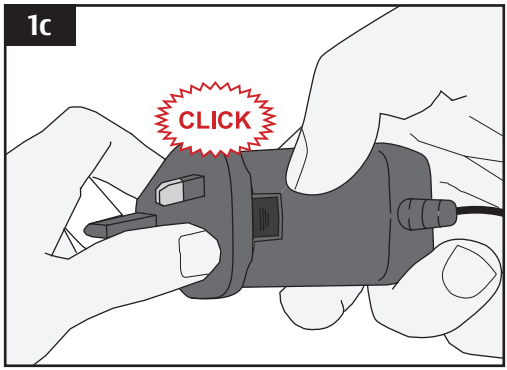
If you require replacement parts please contact our Sales Department, quoting codes where applicable.

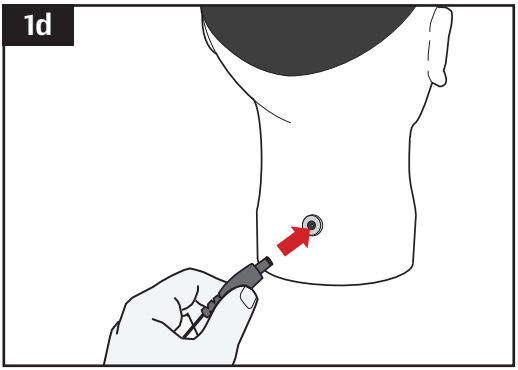
Scan the QR code to access the product video.
https://youtu.be/OLITdONB9b4

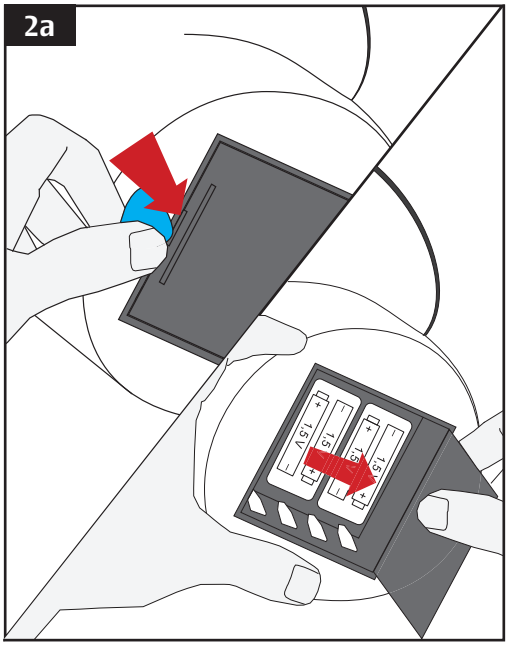
Before Use

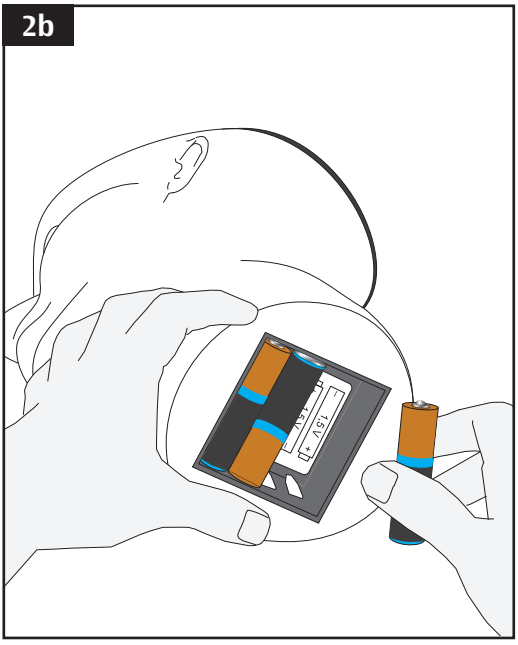












Using the Included Power Adaptor

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 first.

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 model.

Plug the low voltage adaptor into the mains outlet.

The simulator is now ready for 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.

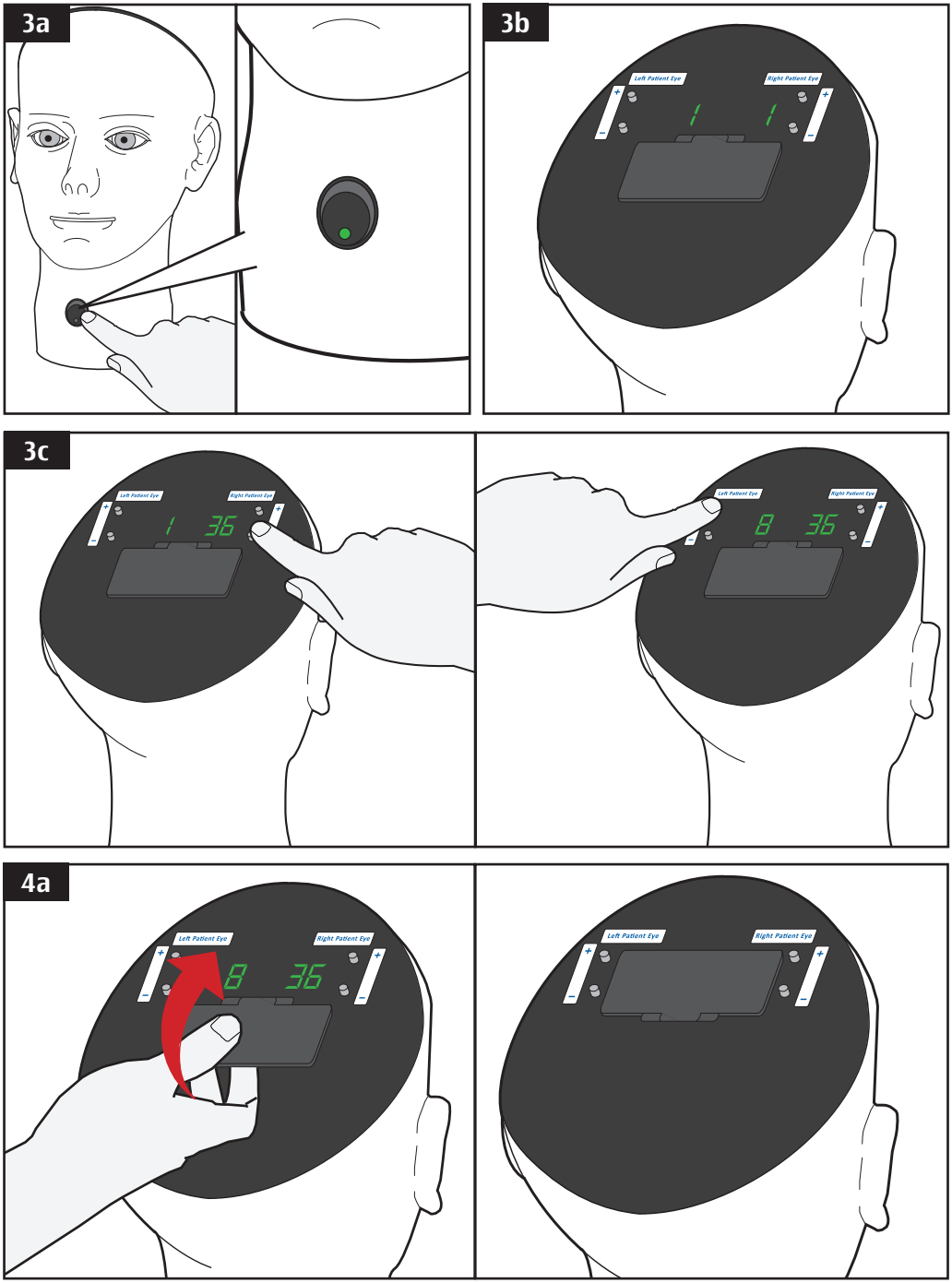
Re-chargeable batteries may be used to power the trainer. Please note however that the mains adaptor will not re-charge batteries.

2a Open the battery compartment at the base of the simulator using the tab on the compartment door.

2b Install 4x AA batteries (not included) as indicated in the battery compartment. Refit the compartment door.

The simulator is now ready for use.

Before Use


3a
3b
Left Patient Eye
Right Patient Eye
1
1
3c
Left Patient Eye
Right Patient Eye
1 36
8 36
4a
Left Patient Eye
Right Patient Eye
8 36

Power on and Select Conditions

3a Power on the model using the power switch.
The green indicator light on the switch 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.

3b After a short delay, the left eye LED and right eye LED condition number indicators will both display a "1", indicating that Condition 1 is being displayed on both patient eyes.

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

3c Any of the 36 conditions may be set independently for each patient eye, at any time.

To set a condition, simply press the Up (+) or Down(–) buttons for each patient eye until the desired condition number is displayed on the LED condition number indicator.

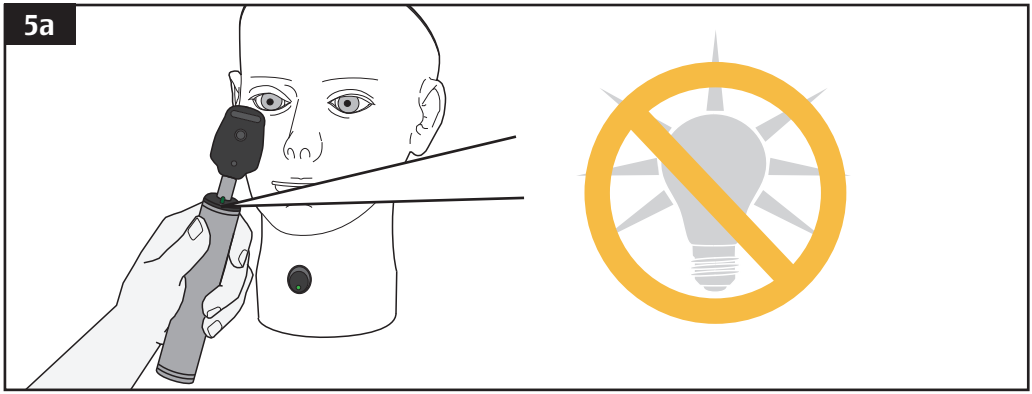
For detailed descriptions of each condition, please refer to page 14.

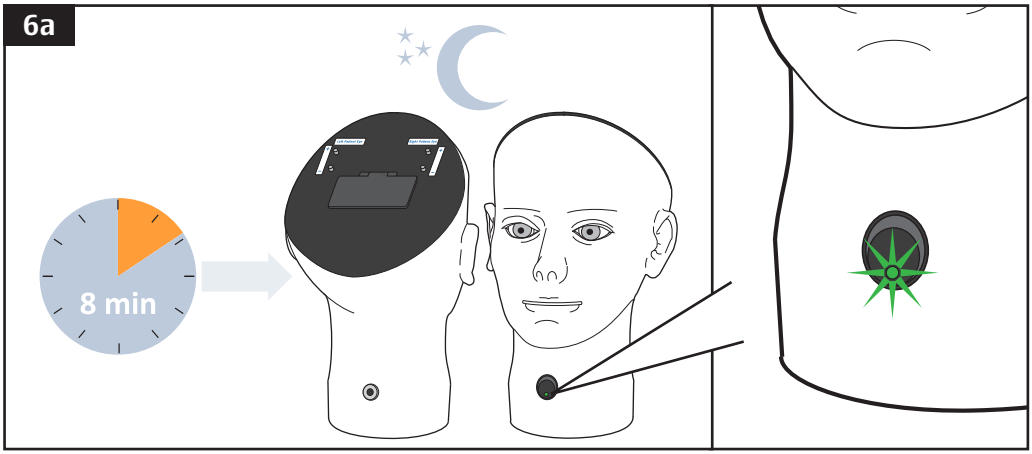
Using the Examination Cover

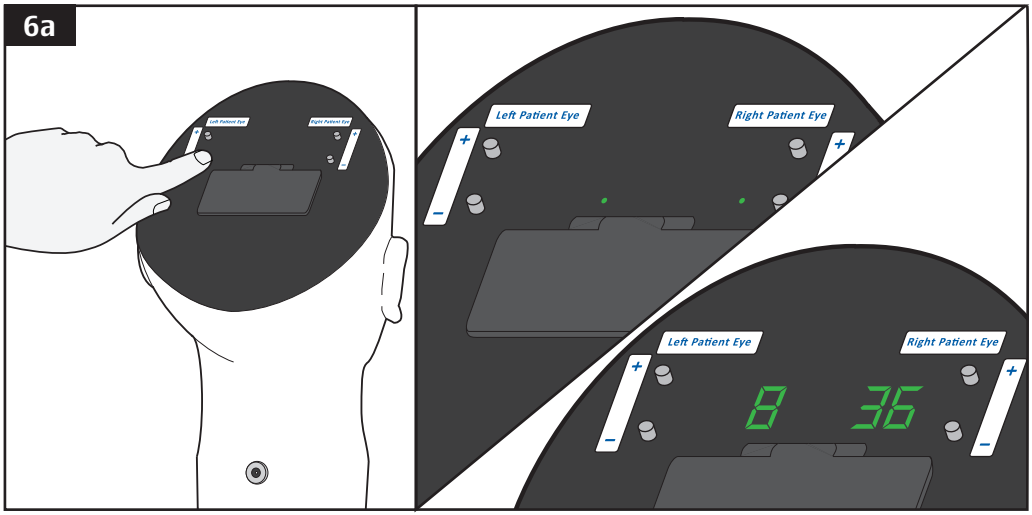
Both the left eye LED and right eye LED condition number indicators may be hidden if required, e.g. under examination conditions.

4a To use, simply lift the hinged examination cover until it rests over the LED eye condition displays.

During Use


5a


6a
8 min


6a
Left Patient Eye
Right Patient Eye
Left Patient Eye
Right Patient Eye
8 36

Ophthalmoscope Use

5a 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

The model has an **automatic sleep mode** which turns off all displays to conserve power.

This is functional if either **battery power** or **mains power** is used.

During sleep mode, the last conditions selected on each eye are stored.

6a After a period of approximately **8 minutes** of no new conditions being selected, the main internal display and LED condition number indicators will switch off.

The **green power indicator light** on the power switch will **flash,** indicating that sleep mode is operational.

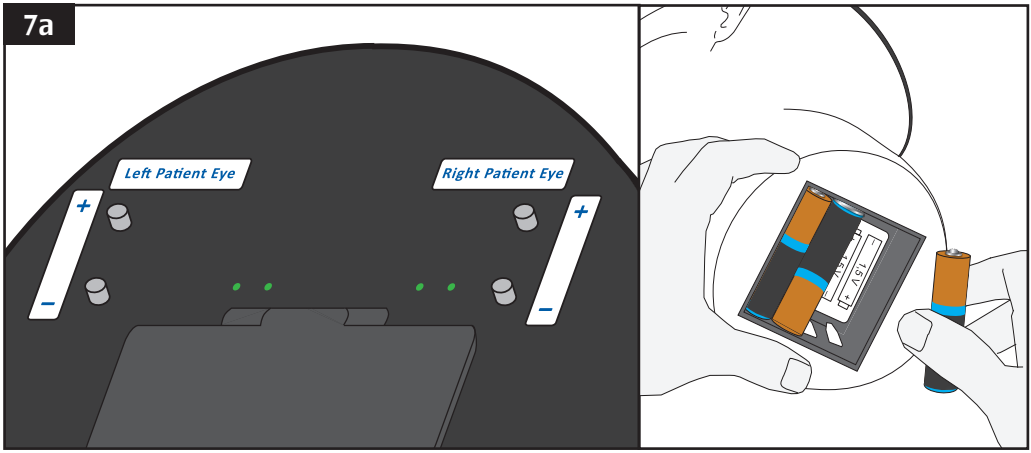
6b To wake, simply press any Up (**+**) or Down(**-**) button **once.**

After a short delay, the LED condition number indicator displays will show two "●" and then resume to the numbers of the conditions which were last selected for each eye.

The model is ready for use again.

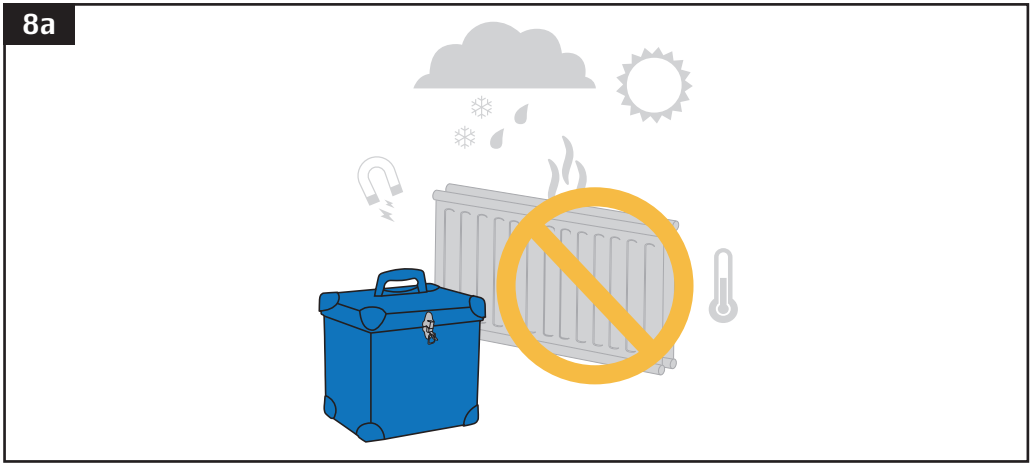
During Use

7a



After Use

8a



Low Battery Indication

7a If battery power is insufficient for the model to function correctly, low battery indication may display.

The green power indicator light will illuminate when the model is powered on however the LED condition number indicator displays and main condition display will remain off. Four "●" will appear on the LED condition number indicator displays.

Switch the model off and replace the batteries.

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

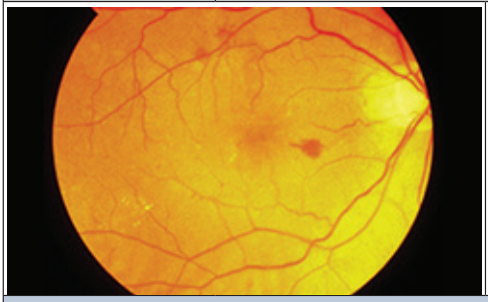
8a After use, or before transportation, the model should be placed with the head installed in the shoulder base and **upright** in the supplied **Rigid Carrying Case.**

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

Conditions and Diseases of the Retina

Diabetic Retinopathy: Conditions 1 - 8 (Conditions shown for Right Eye)

Condition 1	This view is of the optic disc and temporal retina



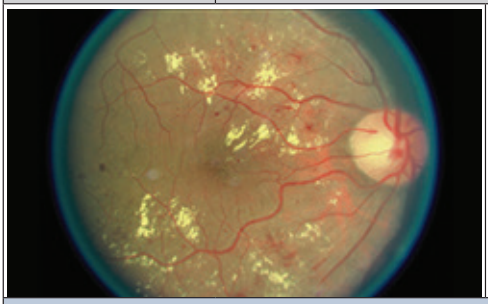
The main clinical features are:

- Blot haemorrhages in the nasal macular area and superior temporal arcade
- Hard exudates along the inferior temporal arcade
- Microaneurysms (MA) in the macular area
- Circinate exudates along the inferior temporal arcade

This diagnosis is consistent with:
BACKGROUND DIABETIC RETINOPATHY AND DIABETIC MACULOPATHY (if Visual Acuity ≤ 6/12)

Comment:
The macular area, as defined by a circle area centred on the fovea with its radius extending to the edge of the optic disc, has exudates in it. This makes the condition Maculopathy. If the visual acuity was normal and there were Microaneurysms and haemorrhage only, then this would be background diabetic retinopathy alone. Normal VA is usually defined as better than 6/12. Microaneurysms are defined as round red dots less than the diameter of a vein at the optic disc margin. Other red lesions are usually haemorrhages.

Condition 2	This view is of the optic disc and temporal retina



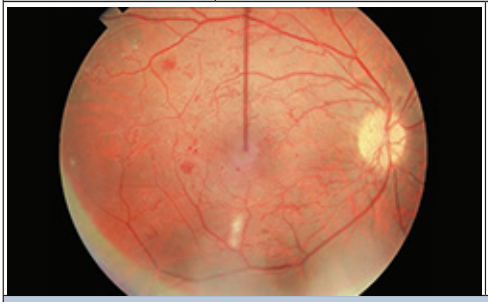
The main clinical features are:

- Multiple hard exudates in the macular area, some are circinate
- Haemorrhages and Microaneurysmse

This diagnosis is consistent with:
DIABETIC MACULOPATHY (with visual acuity ≤ 6/12)

Comment:
The visual acuity may be reduced depending on the location and macular oedema. Circinate hard exudates often have Microaneurysms at their centre. The haemorrhages in the inferior temporal arcade are linear (flame-shaped). Along the vascular arcades the hard exudates are linear around the central macular area. These are key features of grade 3 hypertensive retinopathy. Hypertension is an important risk factor for Diabetic Retinopathy. The darker retinal appearance is normal in an Asian or African Caribbean patient.

Condition 3	This view is of the optic disc and temporal retina



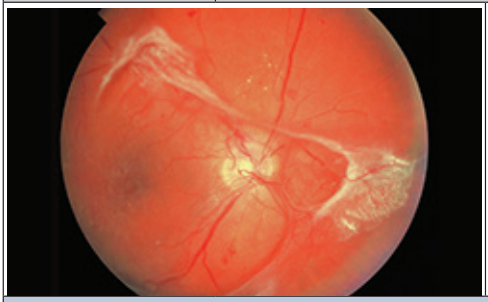
The main clinical features are:

- Multiple dot and blot haemorrhages
- Cotton wool spots (CWS)
- Intra-retinal micro-vascular abnormalities (IRMA)
- New Vessel formation on the disc (NVD)

This diagnosis is consistent with:
PRE-PROLIFERATIVE DIABETIC RETINOPATHY

Comment:
Pre-proliferative Diabetic Retinopathy is characterised by retinal ischaemia. Cotton Wool Spots represent areas of focal retinal ischaemia and Intra-retinal micro-vascular abnormalities are a pathological attempt at micro-revascularisation. Intra-retinal micro-vascular abnormalities are flat and do not grow into the vitreous. The tangle of fine blood vessels at the optic disc may be early New Vessels on the disc.

Condition 4	This view is of the central fundus with the optic disc



The main clinical features are:

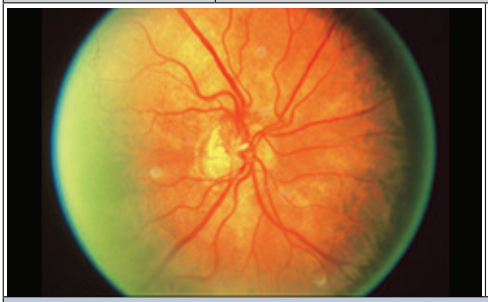
- New vessels on the disc (NVD) and elsewhere (NVE) along the vascular arcades
- Haemorrhages
- Hard exudates
- Pre-retinal fibrosis

This diagnosis is consistent with:
ADVANCED PROLIFERATIVE DIABETIC RETINOPATHY

Comment:
On-going ischaemia and increase in vaso-proliferative factors. The New Vessels grow into the vitreous and are fragile leading to haemorrhage. As the haemorrhage organises, fibrous tissue reaction occurs often resulting in tractional retinal detachment.

Conditions and Diseases of the Retina (Continued)

Condition 5	This view is of the optic disc



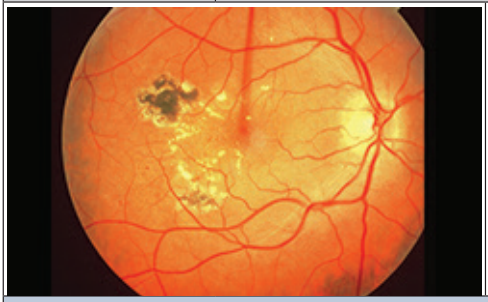
The main clinical features are:

- New Vessels formation on the disc (NVD)
- Myopic Crescent over the temporal edge of the optic disc
- Peripheral retinal pigment layer prominence

This diagnosis is consistent with:
PROLIFERATIVE RETINOPATHY WITH NEW VESSELS ON THE DISC (NVD)

Comment:
New Vessels on the disc are often difficult to see and the first sign of Proliferative Diabetic Retinopathy. Myopic Crescent over the temporal edge of the optic disc is subtle with peripheral retinal pigment layer prominence (often seen in Myopia). This should not be confused with Retinitis pigmentosa. The New Vessels will grow further into the vitreous and are fragile and can lead to haemorrhage.

Condition 6	This view is of the central fundus with the optic disc



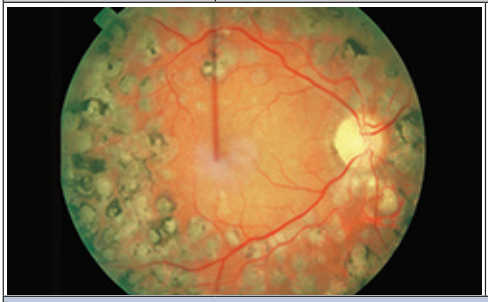
The main clinical features are:

- Focal areas of pigmentation consistent with focal laser photocoagulation
- Multiple hard exudates are seen within the macular area
- Some in a circinate pattern with central Microaneurysms

This diagnosis is consistent with:
DIABETIC MACULOPATHY: ONGOING WITH PREVIOUS FOCAL LASER PHOTOCOAGULATION

Comment:
Visual acuity will almost certainly be ≤ 6/12. Microaneurysms leak plasma which precipitates in a lipid-rich protein deposit which is hard exudate. The circinate nature of some hard exudates with central Microaneurysms clearly suggests this. The central Microaneurysms within a clump or circinate of exudates are laser photocoagulated to obliterate and seal the Microaneurysms to reduce plasma leakage.

Condition 7	This view is of the optic disc and temporal retina



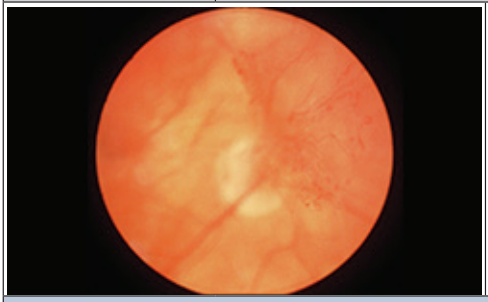
The main clinical features are:

- Multiple laser scars with areas of hyperpigmentation
- Probable regressed New Vessels at the disc with residual gliosis

This diagnosis is consistent with:
PAN RETINAL LASER PHOTOCOAGULATION

Comment:
The overall appearance suggests an excellent response to laser photocoagulation and medical management. Apart from possible Microaneurysms there is no active Diabetic Retinopathy. The patient will have reduced peripheral vision and a degree of night-blindness (compare with Retinitis pigmentosa)

Condition 8	This view is of the optic disc



The main clinical features are:

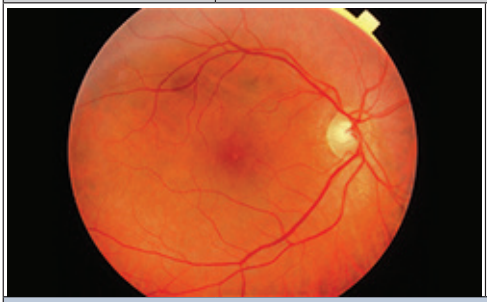
- Disc area is obscured
- Poorly defined vasculature

This diagnosis is consistent with:
UNGRADABLE RETINOPATHY WITH POSSIBLE NVD

Comment:
The suspicion of fibro vascular proliferation at the disc and along the vascular arcade with tractional detachment is very strong. This would be a feature of advanced diabetic eye disease.

Important and Common Retinal Conditions: Conditions 9 - 22

Condition 9	This view is of the optic disc and temporal retina



The main clinical features are:

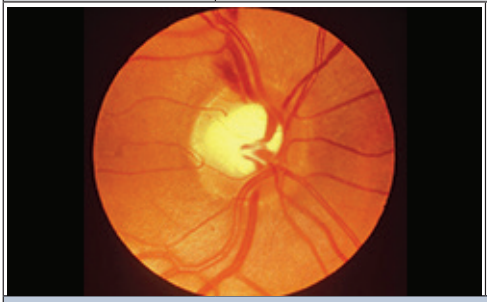
- Optic disc with uniform central cup with cup disc ratio <0.5 and normal neuroretinal rim
- Retinal vessels and macula look normal
- This degree of darker redness in the central macular area (fovea centralis) is normal
- The slight darkening of the peripheral retinal vessels is also normal

This diagnosis is consistent with:
NORMAL FUNDUS (OPTIC DISC AND RETINA)

Comment:
Sequence for looking at the retina:

- Light reflex for cataract, corneal arcus, xanthelesma, conjunctiva
- Start at the optic disc
- Superior temporal arcade and inferior temporal arcade
- Macular area
- Superior nasal arcade and inferior nasal arcade
- Peripheral, clockwise sweep to look for peripheral lesions

Condition 10	This view is of the posterior pole centred on the optic disc



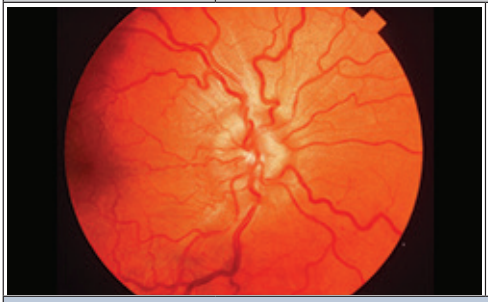
The main clinical features are:

- Large cup disc ratio (>0.5) indicating cupping of the optic disc
- Superior polar notching
- Nasal displacement of central blood vessels

This diagnosis is consistent with:
GLAUCOMA

Comment:
Large cup disc ratio (>0.5). This means that the cup (central circle) to disc diameter is > 0.5). The normal ratio is 0.3. Tonometry will reveal increased vitreal pressure (usually greater than 16 mmHg at diagnosis). Glaucomatous damage and its extent is confirmed by visual fields and tomographic imaging techniques. Central scotoma and a painful eye in most cases. Consider as cause of severe headache. The diagnosis is an emergency as ongoing ischaemia due to pressure can precipitate visual loss.

Condition 11	This view is of the optic disc and temporal retina



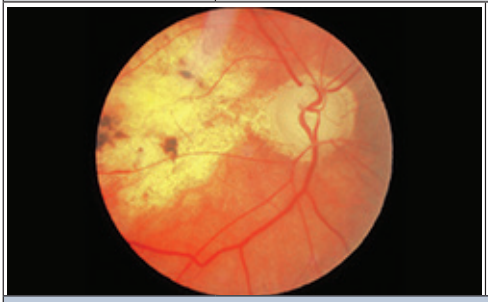
The main clinical features are:

- Disc margins are obscured and swollen and hyperaemic
- Retinal vessels show tortuosity

This diagnosis is consistent with:
PAPILLOEDEMA

Comment:
Spontaneous venous pulsation may be absent, if present than Papilloedema is unlikely. Visual symptoms are absent in early stages. A space occupying lesion must be excluded.

Condition 12	This view is of the optic disc and temporal retina



The main clinical features are:

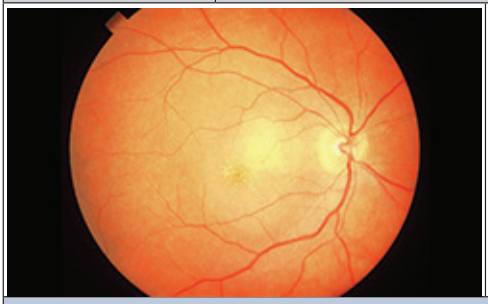
- Optic disc pallor with cupping
- Large area of macular scarring

This diagnosis is consistent with:
OPTIC ATROPHY WITH MACULAR SCARRING (AND GLAUCOMA)

Comment:
Age-related macular degeneration would be the commonest cause of macular scarring. Gluacoma is likely with the optic disc to cup ratio of considerably < 0.5.

Conditions and Diseases of the Retina (Continued)

Condition 13	This view is of the optic disc and temporal retina



The main clinical features are:

- Focal areas of atrophy of retinal pigment in the central macular area (fovea centralis)
- Drusen in the macular area

This diagnosis is consistent with:
DRY AGE-RELATED MACULAR DEGENERATION

Comment:
Presence of haemorrhages and oedema in the macular area would suggest wet changes (not seen here).

Condition 14	This view is of the optic disc and temporal retina

The main clinical features are:

- Focal narrowing of arterioles
- Changes at arterio-venous crossings along inferotemporal arcade (A-V nipping

This diagnosis is consistent with:
HYPERTENSIVE RETINOPATHY: GRADE 2

Comment:
Absence of haemorrhages (flame shaped) and disc swelling suggest early changes or chronic hypertension. The grading system can be summarised as follows:

Microaneurysms (MA) are rare in hypertensive retinopathy without diabetes mellitus

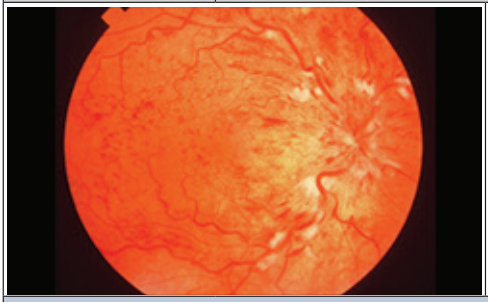
Grade 1: Arteriolar narrowing

Grade 2: Arterio-venous nipping

Grade 3: Exudates, Haemorrhages, Cotton wools spots (CWS)

Grade 4: Papilloedema

Condition 15	This view is of the optic disc and temporal retina



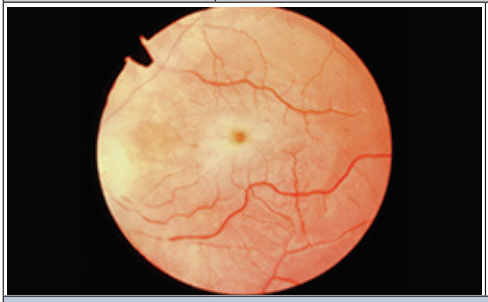
The main clinical features are:

- Papilloedema
- Tortuosity and dilatation of all branches of the central retinal vein
- Retinal haemorrhages: flame shaped, dot and blot in all quadrants
- Cotton wool spots (CWS)

This diagnosis is consistent with:
CENTRAL RETINAL VEIN OCCLUSION (CRVO)

Comment:
The presence of Cotton Wool Spots would suggest significant ischaemic element. Space-occupying lesions in the cerebrum and hyperviscosity have to be excluded. Hypertension alone can cause Central Retinal Vein Occlusion . The lesions can be better understood by considering that arteriolar blood is going into the retina but cannot exit through the central optic nerve vein.

Condition 16	This view is of temporal retina and temporal optic disc



The main clinical features are:

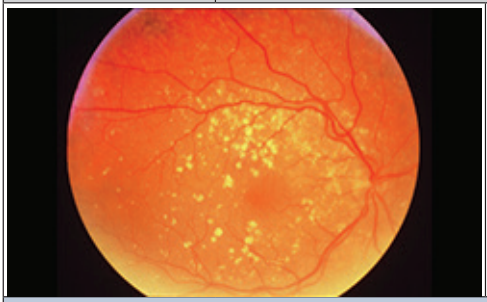
- Attenuation of arteries and veins
- The pale temporal edge of the optic disc is shown
- Central 'cherry red spot' with surrounding pale retina

This diagnosis is consistent with:
CENTRAL RETINAL ARTERY OCCLUSION (CRAO)

Comment:
Poor prognosis due to retinal infarction. Retinal cloudiness of pale retina would disappear after a few weeks. Attenuated vessels would remain and consecutive optic atrophy would be evident. The cherry-red spot is seen because the macular arterial supply from the choroid can remain intact. Often there is a band of neural tissue that is not rendered ischaemic by the Central Retinal Artery Occlusion, which is seen if there is an adequate cilio-retinal artery supply. This would supply the axons from the fovea centralis retinal receptors to the optic disc.

Conditions and Diseases of the Retina (Continued)

Condition 17	This view is of the optic disc and temporal retina



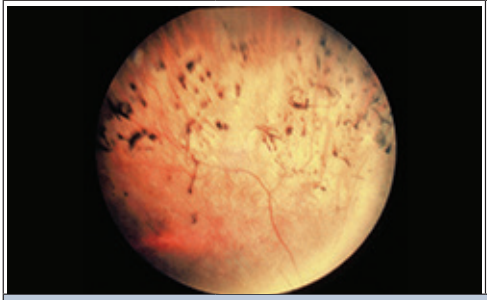
The main clinical features are:

- Widely distributed drusen with the macular area

This diagnosis is consistent with:
DRUSEN

Comment:
Here the fovea centralis is not affected and this patient's visual acuity may be normal. Drusen are a softer yellow and lack a hard edge - not to be confused with hard exudates. This patient is at higher risk of macular degeneration as drusen spread towards the central macular area.

Condition 18	This view is of mid peripheral retina



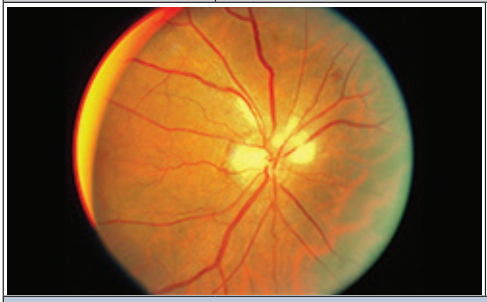
The main clinical features are:

- Multiple bony spicule retinal pigmentation scattered in the periphery of the retina

This diagnosis is consistent with:
RETINITIS PIGMENTOSA

Comment:
There may be an associated history of poor night vision or blindness. Family history is often positive. The optic disc may show waxy pallor with attenuation of vessels. The visual field will be similar to looking permanently out of a small 3cm diameter tube. Not to be confused with laser photocoagulation scars.

Condition 19	This view is of the optic disc and surrounding retina



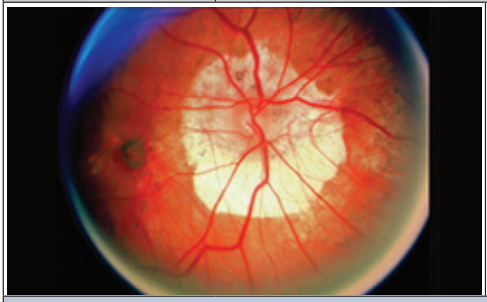
The main clinical features are:

- Disc margin and emerging vessels obscured by myelinated nerve fibres along superior and nasal areas

This diagnosis is consistent with:
MYELINATED NERVE FIBRES

Comment:
On clinical examination the blind spot would be expected to be larger, but this would be very difficult to discern clinically. Approximate 1-3% of the population have some degree or other of this normal variant. During embryogenesis the myelinated nerve fibres "spilled" over onto the retinal nerve fibres rather that stopping within the optic disc margin.

Condition 20	This view is of the posterior pole centred on the optic disc



The main clinical features are:

- Large optic disc
- Marked peripapillary chorioretinal atrophy

This diagnosis is consistent with:
HIGH MYOPIA

Comment:
Areas of chorioretinal atrophy in the macular area are not uncommon in highly myopic patients. The patient would be expected to have an enlarged blindspot.

Conditions and Diseases of the Retina (Continued)

Condition 21	This view is of the posterior pole centred on the optic disc

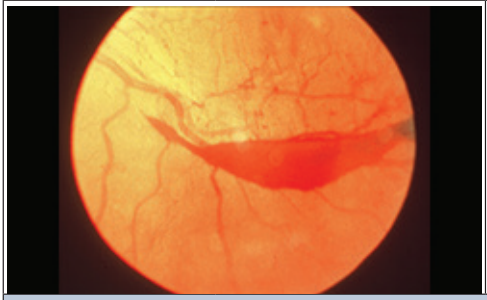
The main clinical features are:

- Tortuosity and dilatation of the inferior temporal branch of the central retinal vein with A-V nipping
- Retinal haemorrhages: flame shaped, dot and blot
- Microaneurysms
- Multiple hard exudates

This diagnosis is consistent with:
BRANCH RETINAL VEIN OCCLUSION (BRVO)

Comment:
Hyperviscosity due to any cause has to be excluded. Hypertension alone can cause Branch Retinal Vein Occlusion . The lesions can be understood by considering that arteriolar blood is going into this temporal arcade but cannot exit through the associated vein.

Condition 22	This view is of the inferior temporal retina



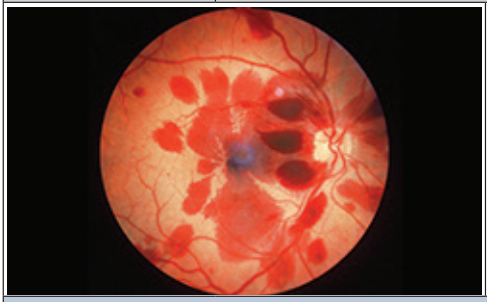
The main clinical features are:

- Boat-shaped pre-retinal haemorrhage
- Retinal haemorrhages: few dots and blots
- Microaneurysms

This diagnosis is consistent with:
PRE-RETINAL HAEMORRHAGE

Comment:
There are many causes. In this patient, secondary to diabetic retinopathy, leakage from a proliferative is likely. Also consider trauma and sub-arachnoid haemorrhage.

Condition 23	This view is of the optic disc and temporal retina

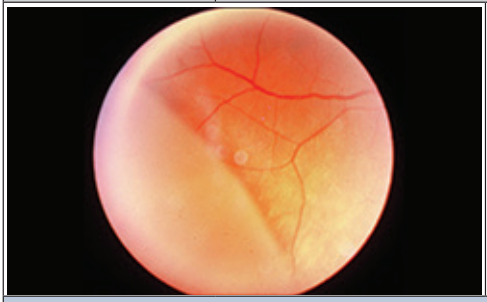


The main clinical features are:
- Multiple retinal haemorrhages
- Some venous dilatation

This diagnosis is consistent with:
MULTIPLE RETINAL HAEMORRHAGES

Comment:
Multiple retinal haemorrhages are seen in the deep and superficial layers of the retina. Hyperviscosity states (polycythemia, Waldenstrom's macro-globulinaemia, myeloma) can lead to venous dilatation and haemorrhages. Thrombocytopenia and other bleeding diatheses are further possibilities.

Condition 24	This view is of the temporal retina



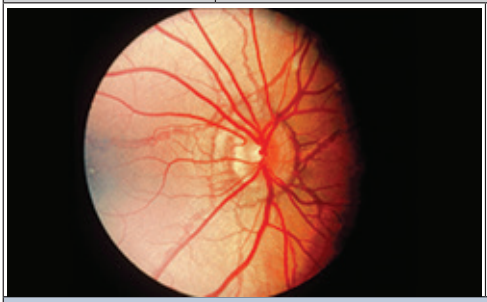
The main clinical features are:
- Area of bullous retina showing area of elevation with fluid

This diagnosis is consistent with:
RETINAL DETACHMENT

Comment:
In the absence of identifiable break and trauma the possibility of choroidal metastasis should be considered.

Conditions and Diseases of the Retina (Continued)

Condition 25	This view is of the optic disc and surrounding retina



The main clinical features are:

- Linear reddish-brown lesions with irregular edges beneath the normal retinal vessels which represent breaks in Bruch's membrane and visualisation of the choroidal circulation.
- Peripheral focal chorio-retinal scars may be present

This diagnosis is consistent with:
ANGIOID STREAKS

Comment:
Bruch's membrane is mainly elastin. The condition is associated with connective tissue disorders. This includes: pseudoxanthoma elasticum, Ehlers-Danlos syndrome, Marfan's syndrome. Rarely Paget's disease, thyrotoxicosis, acromegaly and certain haemoglobinopathies.

Condition 26	This view is of the optic disc and surrounding retina

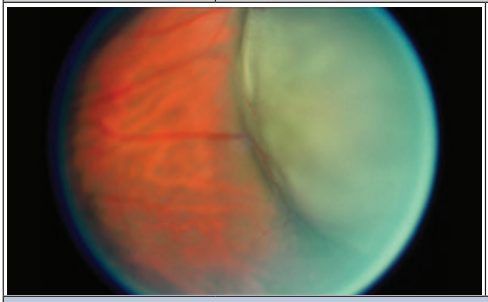
The main clinical features are:

- Flat pigmented lesion involving inferior aspect of the optic disc

This diagnosis is consistent with:
BENIGN DISC NAEVUS

Comment:
Often difficult to distinguish from malignancy.

Condition 27	This view is of peripheral retina



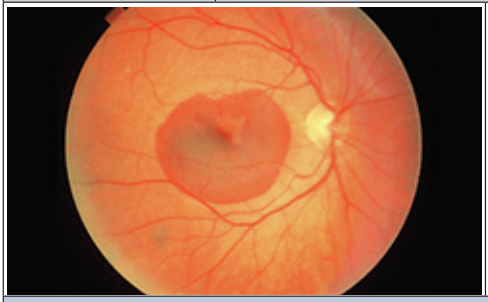
The main clinical features are:

- Elevated dome shaped grey mass

This diagnosis is consistent with:
MALIGNANT MELANOMA

Comment:
A secondary retinal detachment may be present.

Condition 28	This view is of the optic disc and temporal retina



The main clinical features are:

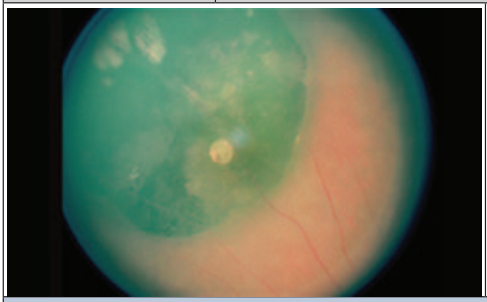
- Large macular haemorrhage in the pre-retinal area

This diagnosis is consistent with:
MACULAR HAEMORRHAGE

Comment:
Sudden severe intra-thoracic or abdominal pressure can lead to this feature. Macular Degeneration and Diabetic Retinopathy can be considered in presence of additional features. A pre-retinal haemorrhage with a fluid level can be seen in some patients with sub-arachnoid haemorrhage. Small areas of haemorrhage adjacent to blood vessels are seen in bacterial endocarditis (Roth's spots).

Conditions and Diseases of the Retina (Continued)

Condition 29	This view is of the peripheral retina



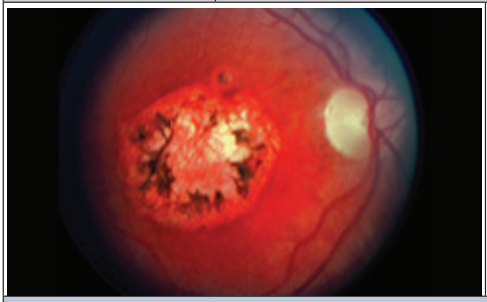
The main clinical features are:

- Green-grey flat asymptomatic lesion with detectable but not sharp borders
- Presence of surface drusen
- Areas of atrophy within the lesion

This diagnosis is consistent with:
CHOROIDAL NAEVUS

Comment:
The large size >5mm and any change in size indicates further investigation.

Condition 30	This view is of the optic disc and temporal retina



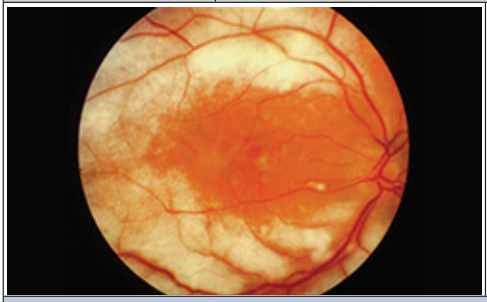
The main clinical features are:

- Pigmented clumps in macular area with chorio-retinal atrophy and scarring
- Pallor of the optic disc is noted indicating atrophy

This diagnosis is consistent with:
MACULAR SCAR (TOXOPLASMOSIS)

Comment:
The cat is a definitive host for Toxoplasma gondii. This is usually a quiescent lesion often discovered incidentally when a child is assessed for impaired vision. An active lesion may show an inflammatory focus with a vitreous haze adjacent to a previous scar and vasculitis. There may be associated anterior uveitis.

Condition 31	This view is of the optic disc and temporal retina



The main clinical features are:

- Dense white areas along vessels with vasculitis along temporal arcade

This diagnosis is consistent with:
CYTOMEGALOVIRUS RETINITIS

Comment:
The spread of vasculitis can be relentless from periphery to the disc along retinal vessels. Haemorrhages may be present in fulminating cases.

Condition 32	This view is of the optic disc and temporal retina

The main clinical features are:

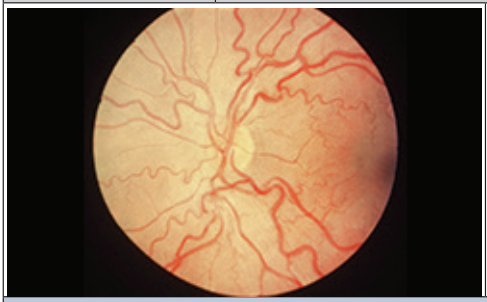
- Pale yellow appearance of vessels in a creamy retinal background
- New vessels at the disc (Proliferative Diabetic Retinopathy)

This diagnosis is consistent with:
LIPAEMIA RETINALIS WITH PROLIFERATIVE DIABETIC RETINOPATHY

Comment:
This is associated with hypertriglyceridaemia and hypercholesterolaemia. This is occasionally encountered in lipid disorders, poorly controlled diabetes and alcoholism. This patient has diabetes as evidenced by the New vessels at the disc.

Conditions and Diseases of the Retina (Continued)

Condition 33	This view is of the optic disc and surrounding retina



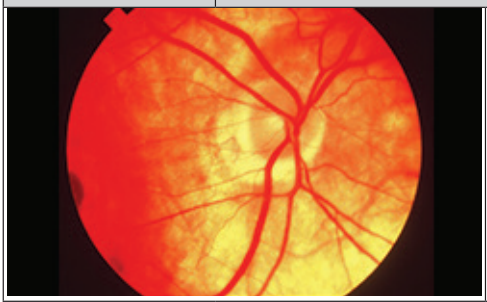
The main clinical features are:

- Tortuous blood vessels, both veins and arteries, emanating from the optic disc
- There are no other lesions such as haemorrhages or hard exudates
- The disc margins are normal

This diagnosis is consistent with:
MEDUSA HEAD OPTIC DISC (This is a normal variant)

Comment:
The tortuous blood vessels are a normal variant. No symptoms are expected. The disc margins are normal and the striking appearance should not be confused with conditions such as Papilloedema or New Vessels at the Disc or New Vessels Elsewhere.

Condition 34	This view is of the optic disc and surrounding retina



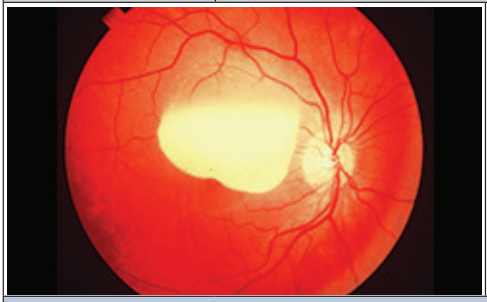
The main clinical features are:

- Marked crescent around the optic disc
- The retinal vessels appear to be normal
- The choroidal vessels are visible

This diagnosis is consistent with:
OPTIC DISC CRESCENT IN A PATIENT WITH HIGH MYOPIA

Comment:
Marked crescent around the optic disc due to stretching of the eyeball around the optic disc. There is often exposed retinal pigment epithelium at this site making the crescent even more pronounced. The choroidal blood vessels are more pronounced due to thinning of the retinal structures.

Condition 35	This view is of the macular and optic disc



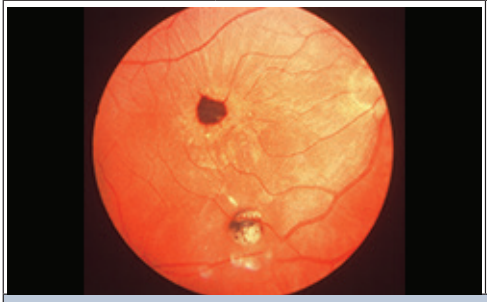
The main clinical features are:

- "Boat-shaped" pre-retinal white area consistent with a resolving retinal haemorrhage

This diagnosis is consistent with:
A RESOLVING PRE-RETINAL HAEMORRHAGE

Comment:
There are many causes. In this patient, secondary to diabetic retinopathy, leakage from a proliferative is likely. Also consider trauma and sub-arachnoid haemorrhage.

Condition 36	This view is of the optic disc and temporal retina



The main clinical features are:

- A lesion in the central macular area
- A lesion in the inferior temporal region with associated scarring
- Exposed retinal pigment epithelium

This diagnosis is consistent with:
MACULAR BURN, WITH AN ADDITIONAL LESION IN THE PERIPHERY

Comment:
This can be due to arc-welding or directly looking at the sun through a telescope or even binoculars. The possibility of misplaced laser photocoagulation is also a differential diagnosis.

This manual has been produced solely as a guide to the conditions on this trainer. This manual is not a diagnostic tool for treatment planning. This manual supersedes all previous versions of the Adam,Rouilly Eye Retinopathy Trainer Manual.

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