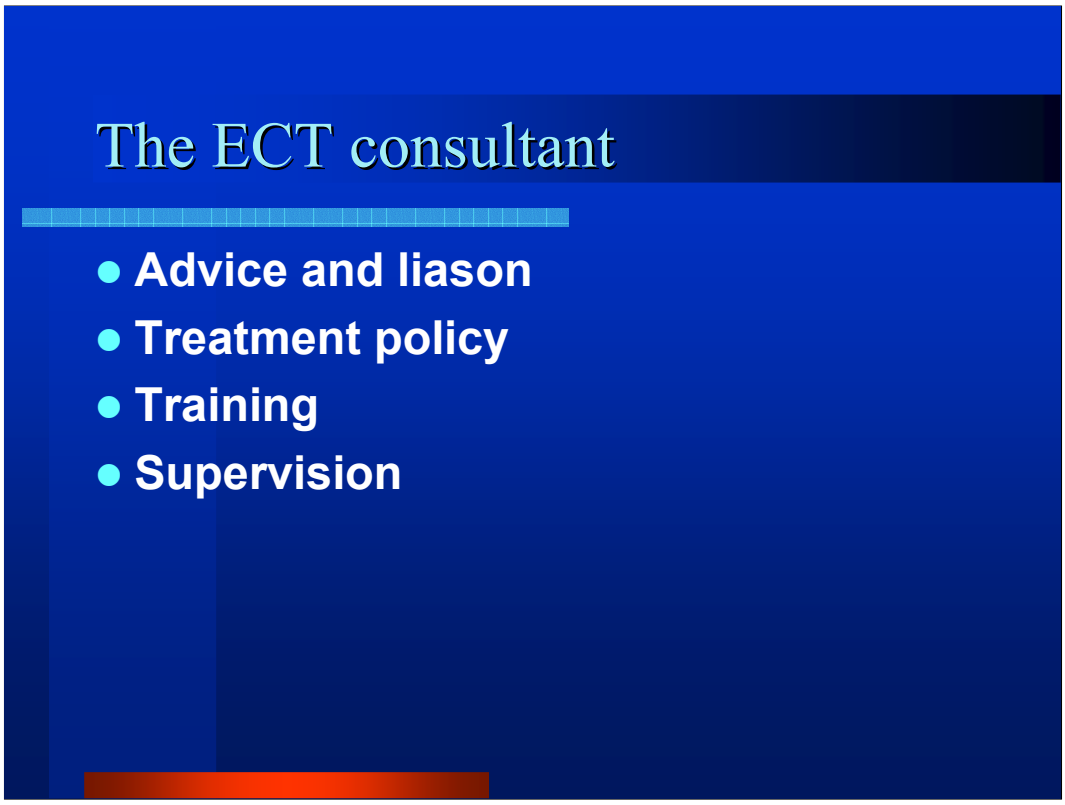
Tasks for the ECT team

Dr Grace Fergusson
Argyll and Bute Hospital
Lochgilphead

Royal College of Psychiatrists ECT training day, January 2002

This presentation outlines the role of the ECT consultant and gives some information on nursing and anaesthetic standards of practice.



There are four main areas of responsibility for the ECT consultant.

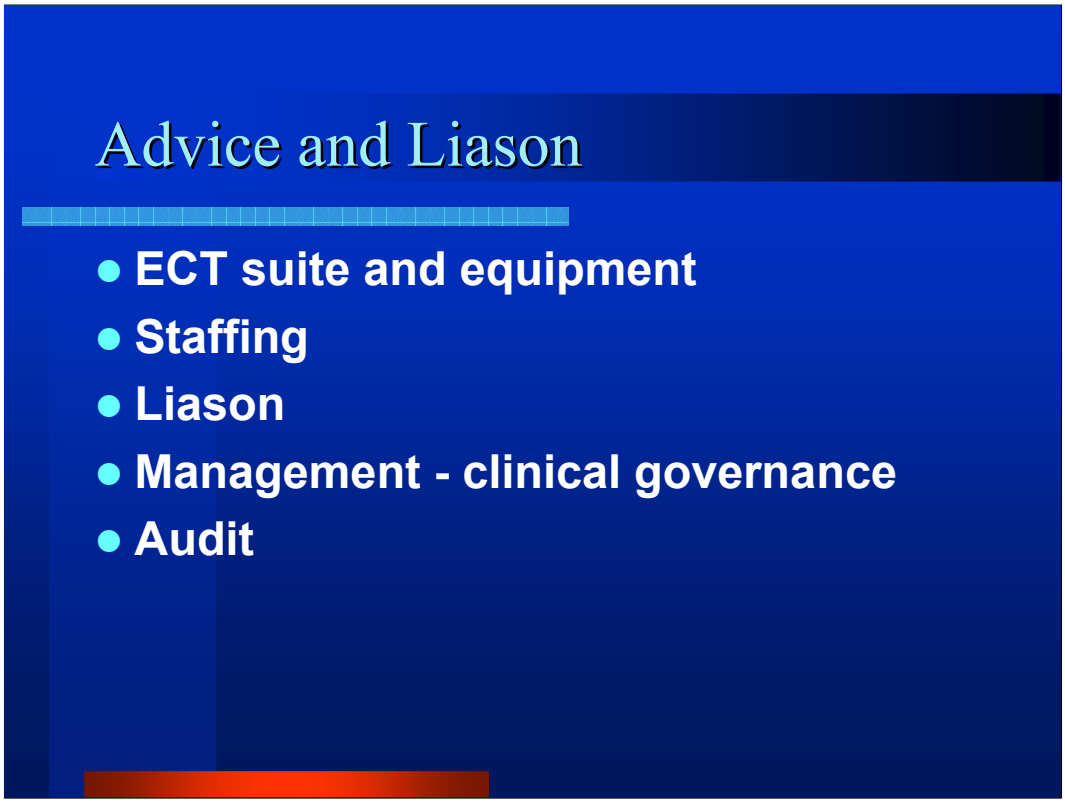
You will

•lead a multi-disciplinary team

•develop the ECT treatment policy

•train your junior doctors and ensure your own continued professional development

•ensure adequate continued supervision



So what will you be asked about in terms of advice and liason?

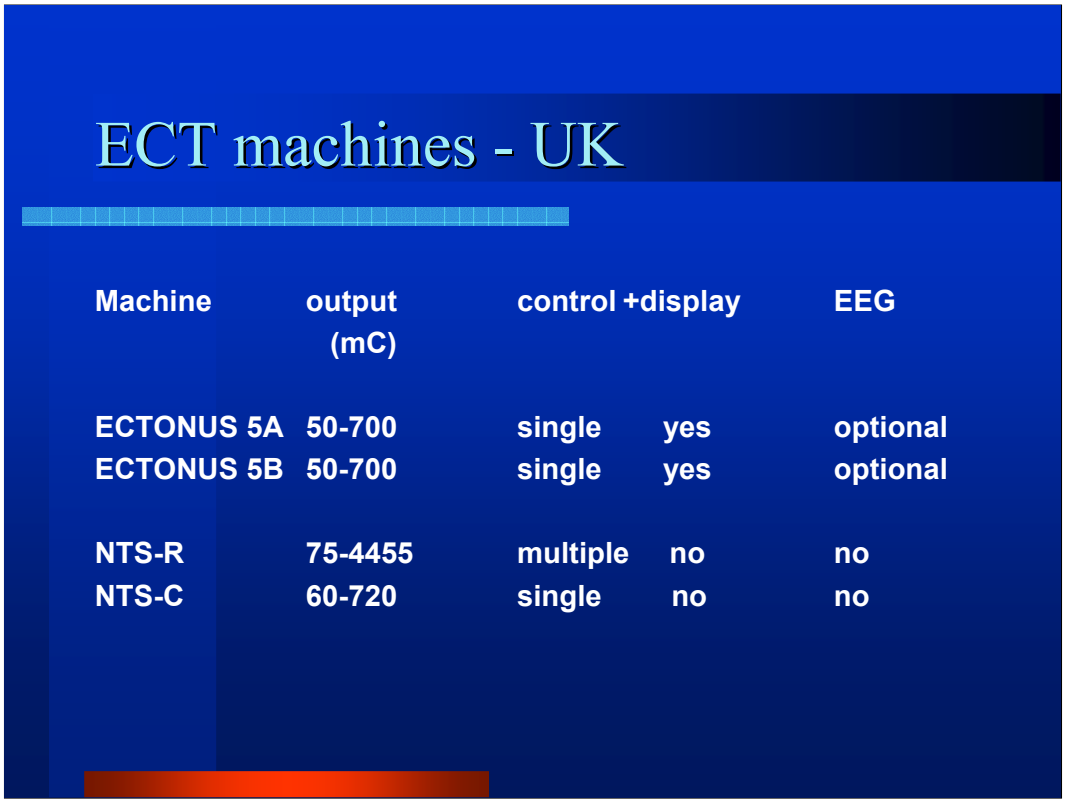
The next seven slides expand on these headings.

Three slides list the ECT machines which were acceptable according to the standards in the 1995 handbook. The next handbook, due for publication later this year, will recommend that EEG monitoring be routinely available.

You must make sure that the junior doctor rota for ECT provides continuity; vital for training purposes and preferable in terms of patient care.

Nursing levels should be in accordance with RCN and UKCC guidelines and there should be a named anaesthetist with whom you can discuss service issues.

And do not be afraid to remind colleagues of the benefits of ECT, we know that it is an effective treatment.



This slide shows the British ECT machines available.

These are relatively cheap to buy but none has an integral real time EEG monitor. Ectron have however produced an 'add-on' monitor which records the length of EEG activity.

ECT machines - Mecta

Machine	output (mC)	control +display		EEG
JR1	22-1152	multiple	yes	no
SR1	22-1152	multiple	yes	yes
JR2	25-1200	single	yes	no
SR2	25-1200	single	yes	yes
Spectrum				
4000 Q or M	5-1152	either	yes	no
5000 Q or M	5-1152	either	yes	yes

Mecta is one of the two American companies which market their machines in Britain.

The four earlier models differed in terms of the output control and EEG facility.

The two most recent additions, one with and one without an EEG, are computerised with micro- chips which serve memory functions.

ECT machines - Somatics

Machine	output (mC)	control +display		EEG
Thymatron DGx	25-1008	either	yes	optional
Thymatron system IV	25-1008	either	yes	yes

The second American company is Somantics with their Thymatron models.

These two machines are flexible and can be commissioned to provide any of the stated control variables.

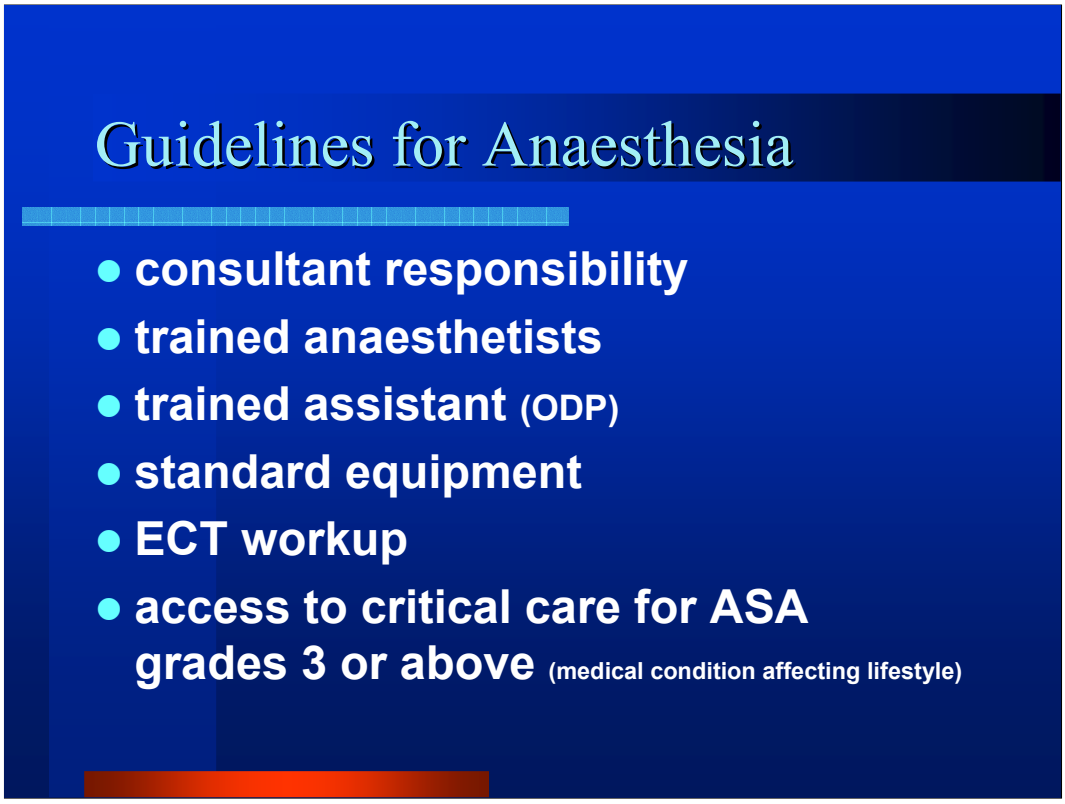
Again the newer models contain micro-chips with memory functions.

These were the standards used in the National Audit of Electroconvulsive Therapy in Scotland, 1997-2000.

A first level nurse is a fully trained nurse, equivalent of grade D or above.

All nurses at ECT should be competent in cardiopulmonary resuscitation (CPR).

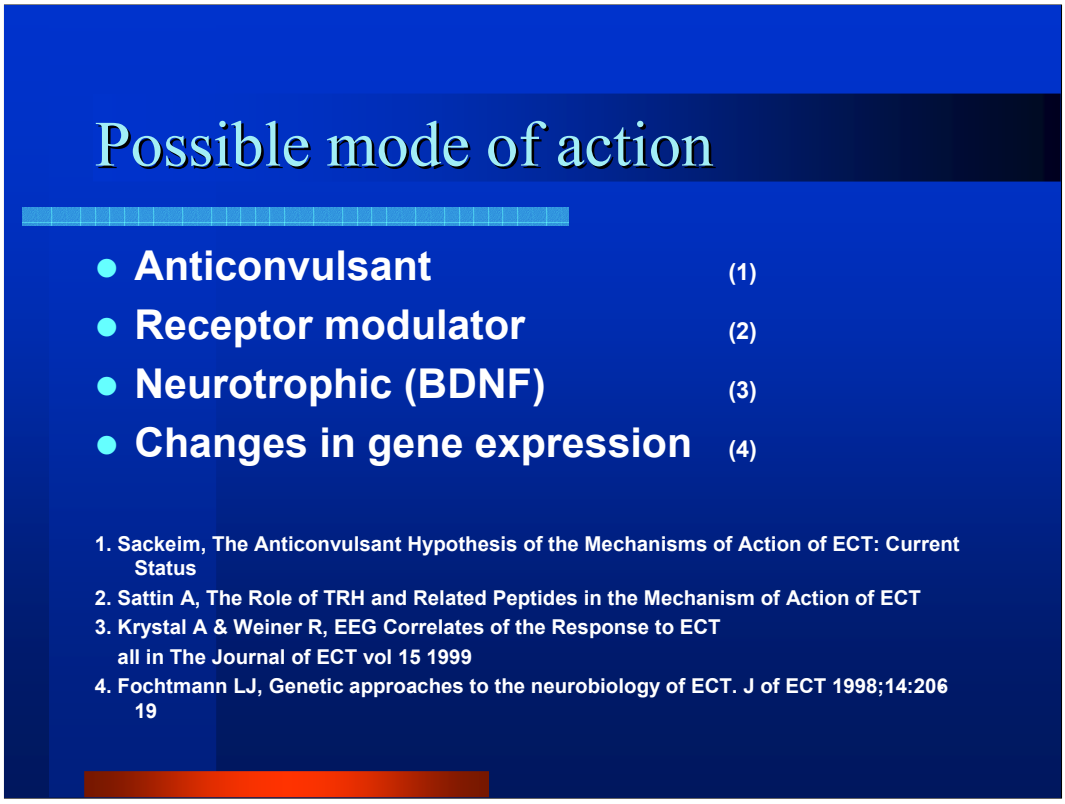
The RCN now stipulate that in order to be fully aware of all the legal and consent issues, the accompanying nurse should also be a trained nurse.



The Royal College of Anaesthetists has endorsed the above guidelines for ECT anaesthesia.

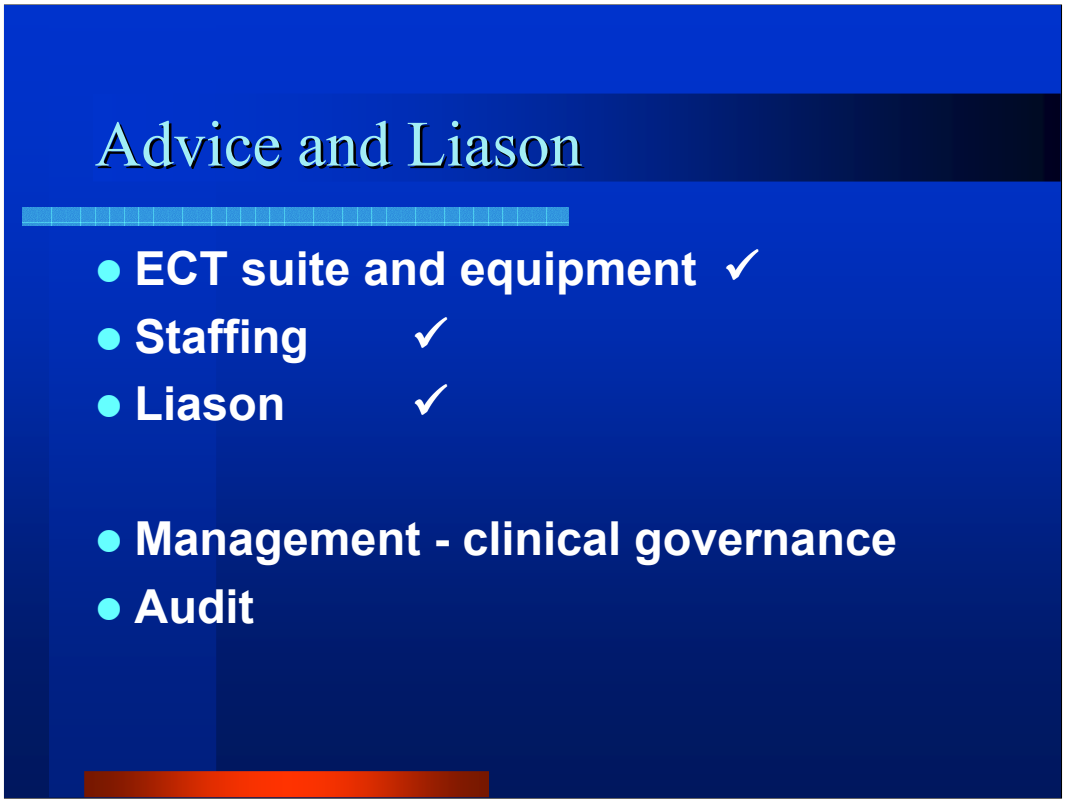
These guidelines are standard for any anaesthetic given on a site remote from a general theatre.

More information is available from the Royal College of Anaesthetists website: www.rcoa.ac.uk



A discussion about the mode of action of ECT can help with liason.

Over the last five years there has been a resurgence of interest in the mechanism of ECT and two complete editions of the Journal of ECT reported on the possible mode of action as outlined in the above slide.



The following documents which help with clinical governance issues and audit are published on The Scottish ECT Audit Network (SEAN) website: www.sean.org.uk

•the Royal College of Psychiatrists Council Report on 'Guidelines for Commissioners of an ECT service

•audit tools as used in the National Audit of ECT in Scotland

The treatment policy is probably the main area for development because nowadays the emphasis is very much on tailoring each ECT session to the individual patient.

But first of all it is important to agree on the respective roles of the clinical and ECT teams.

Do you, as ECT consultant, aim to be a' specialised technician' or move instead towards a shared care model becoming a 'consultant' in all senses and involved in decisions about length and even indication for treatment?

Ie Who decides on the mode of ECT (uni or bilateral)

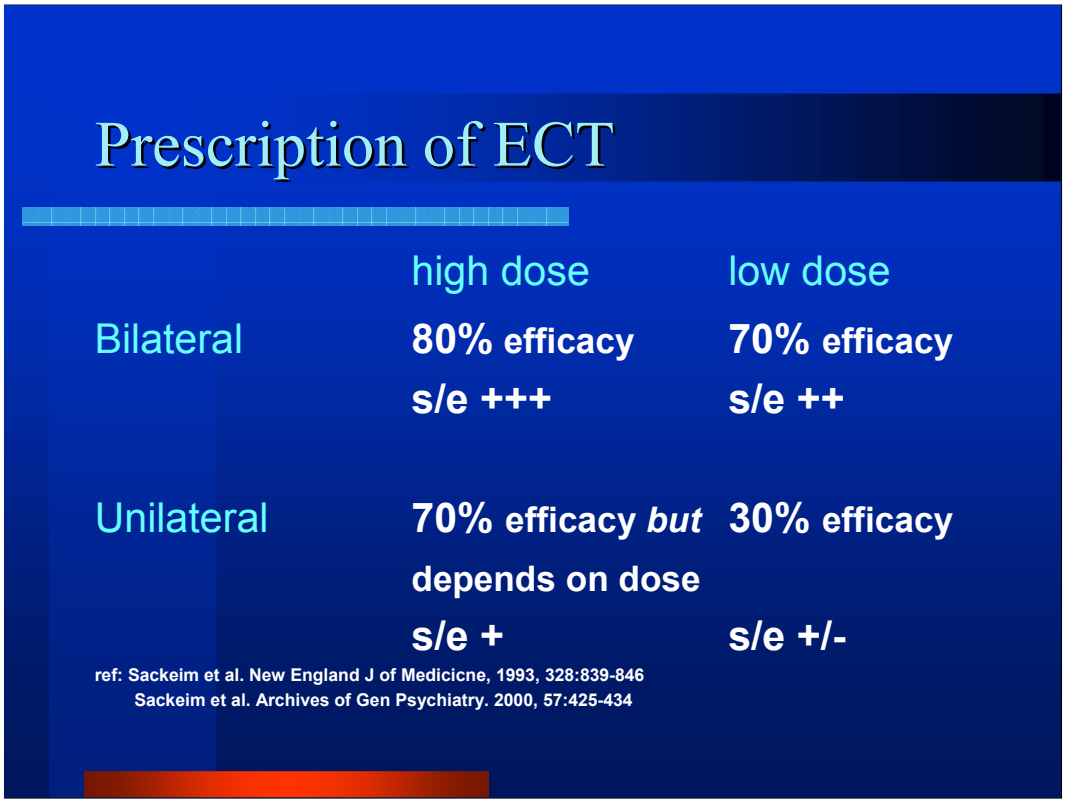
Who sets / alters the dose of electricity?

Who decides when an ECT course starts / stops?

In general it will be the clinical team who will prescribe the ECT and the ECT team who will set the dose but two way information is required for optimum effectiveness.

The ECT consultant should have the ultimate veto on who gets or is refused treatment.

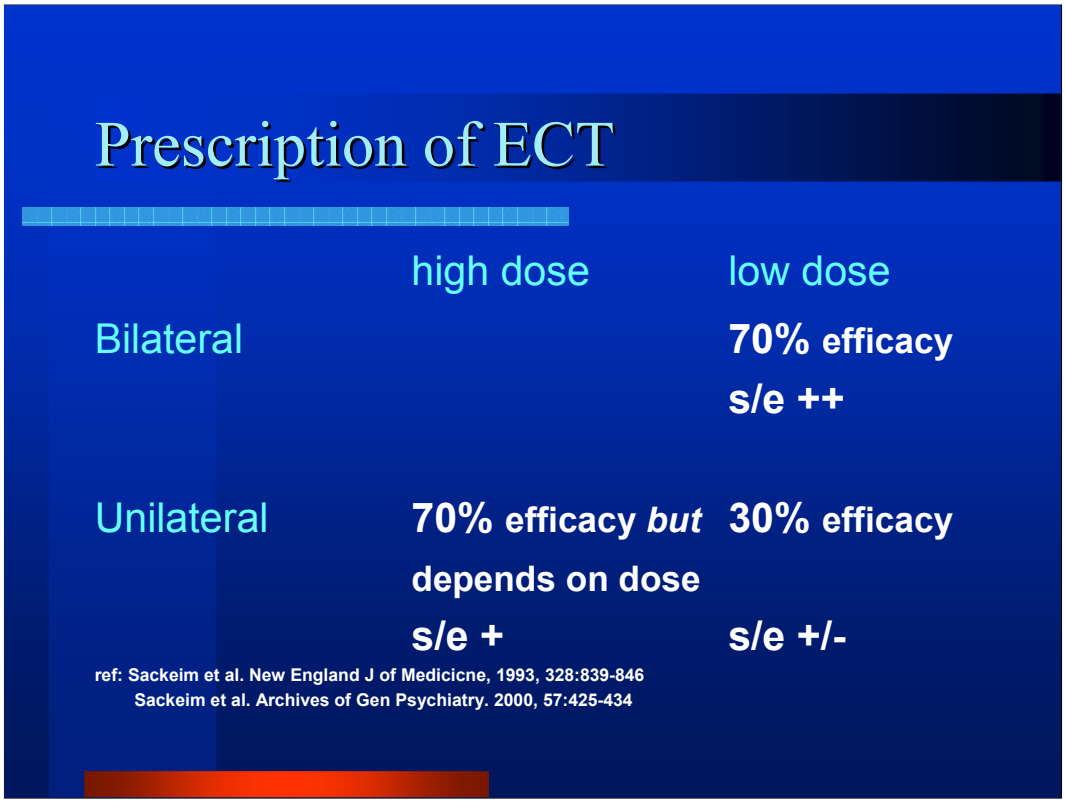
Likewise the roles of the ECT nurses, ward nurses, anaesthetist(s) and ODP should be defined.



The next six slides summarize the factors to consider in the prescription of ECT.

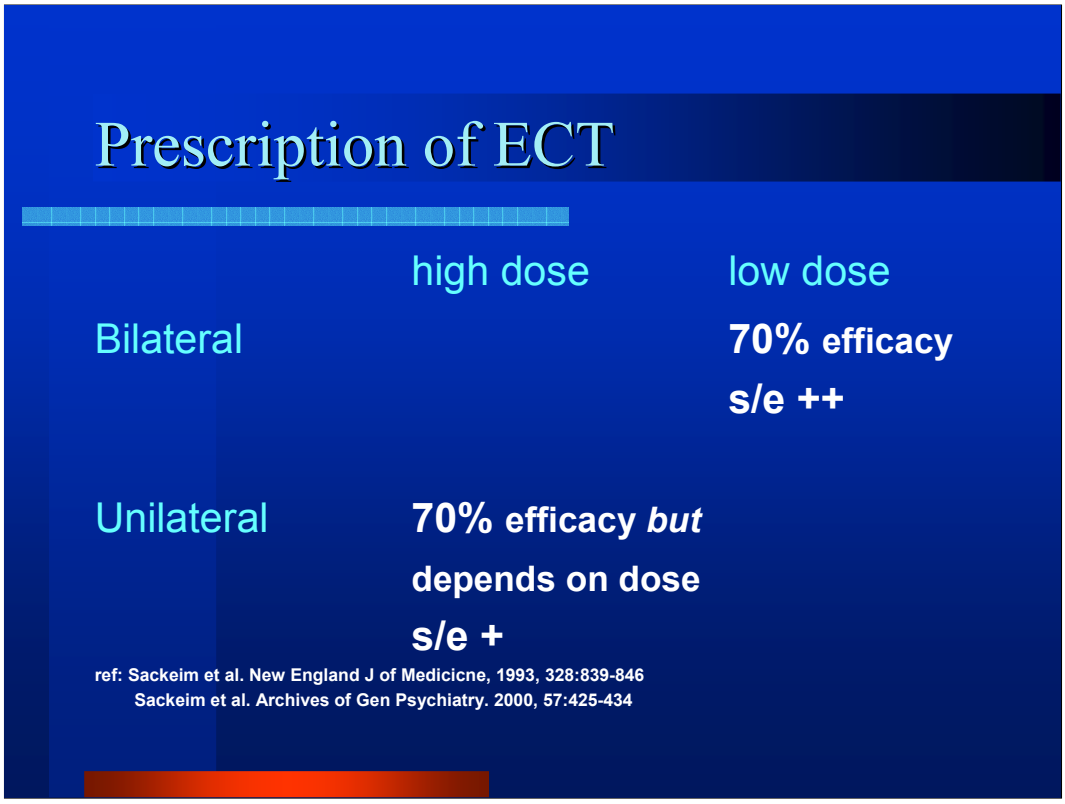
It is important to be aware of recent research in order to understand the underlying principles and evidence on which to base the treatment option for the individual patient.

This slide outlines the effects of the four most common forms of treatment which have been used since the 1940's.



High dose, bilateral ECT was the type first used when ECT was introduced.

It remained popular well into the seventies, mainly as a result of developments in anaesthesia, but because of cognitive side-effects is now not used on a routine basis.



In the early 1980's an attempt to reduce side-effects by reducing the dose of electricity coincided with the introduction of unilateral ECT.

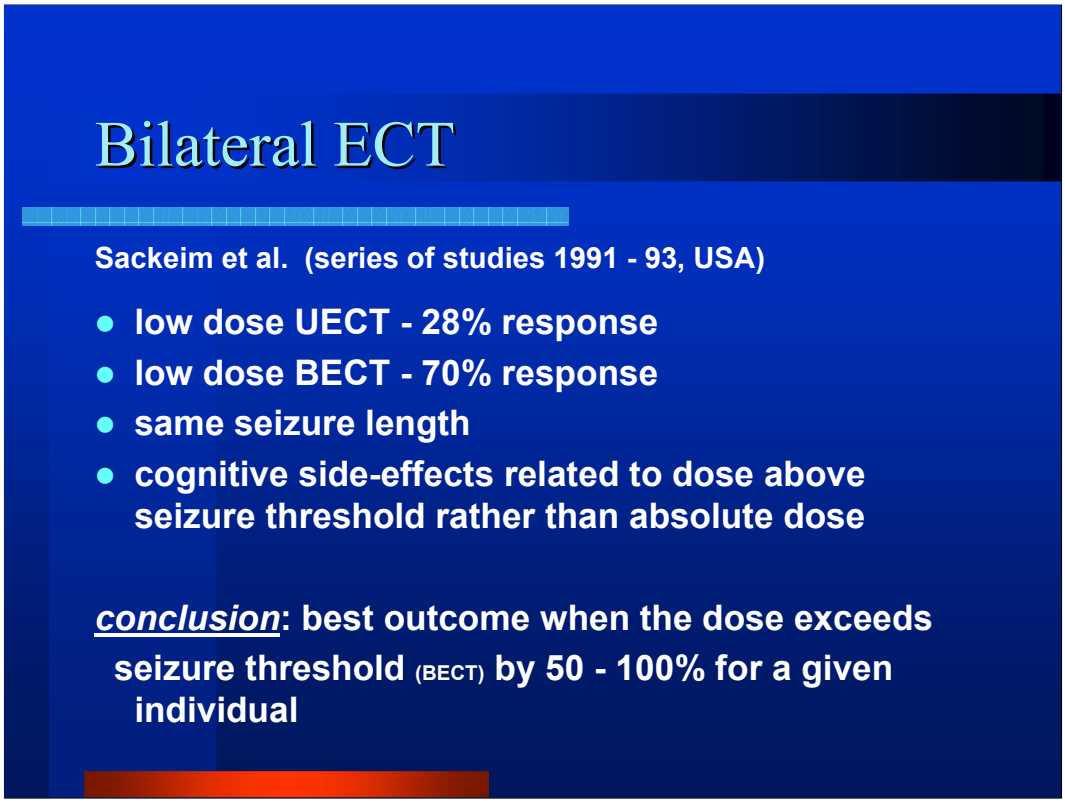
This type of treatment (low dose unilateral), despite producing observable seizures of at least 25 seconds, was ineffective so was abandoned.

The choice of treatment modality is therefore between low dose bilateral and high dose unilateral ECT and in making the decision account should be taken of

- degree of urgency
- severity of illness
- pre-existing cognitive problems
- patient choice (if possible)
- clinical experience

It is possible to consider a combination of UECT and BECT options in a treatment schedule eg starting with BECT and switching to UECT if there are cognitive side-effects or starting with UECT and switching to BECT if the UECT has been ineffective.

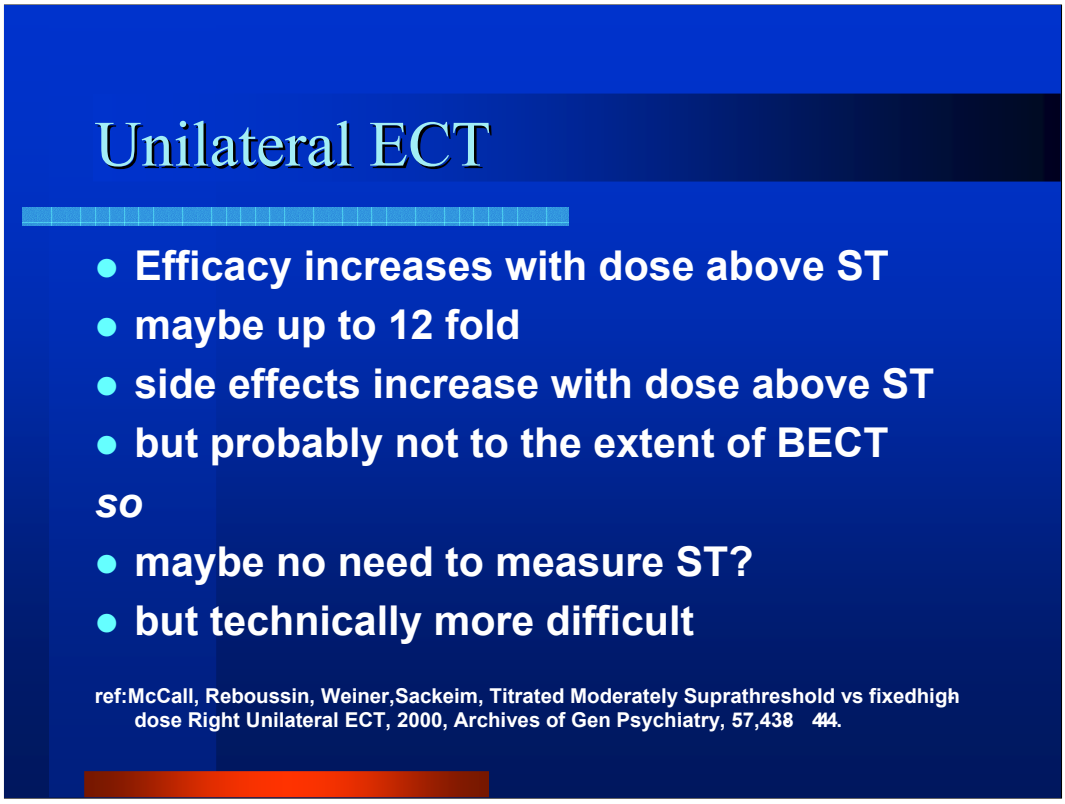
The next three slides give further information.



The 1995 ECT handbook recommends the use of moderately supra threshold bilateral ECT as the treatment of choice.

The work of Sackeim and others in the 1990's found that giving a dose of electricity at 1.5 to 2 times seizure threshold was the most cost-effective in terms of efficacy versus cognitive side effects.

Bilateral ECT is also technically easier to give.



The studies of the 1990's had looked at unilateral ECT at 2.5 times seizure threshold and found this to be less effective than bilateral.

However unilateral ECT is now becoming the treatment of choice in many American clinics following a series of small studies which compared very high dose unilateral ECT with moderately supra threshold bilateral ECT. The suggestion are:

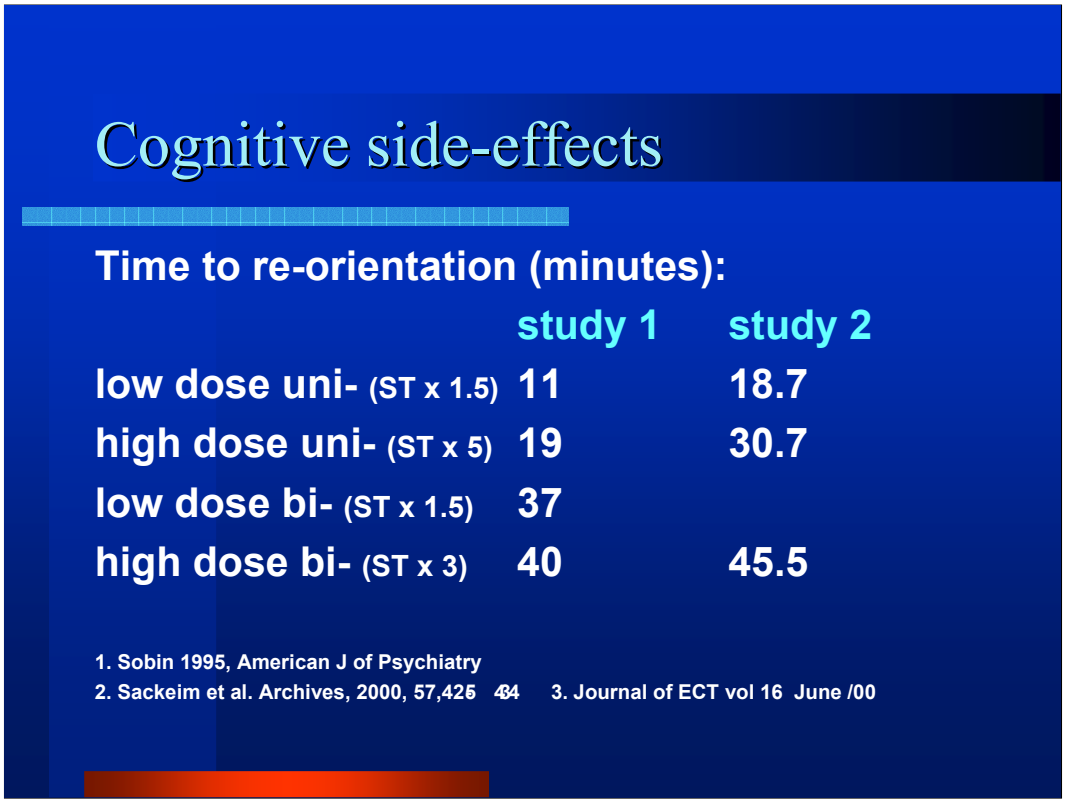
• that both efficacy and side-effects increase with the dose above seizure threshold

• that UECT 5-12 times seizure threshold is as effective as BECT

• that even at high doses cognitive side-effects are less troublesome than with BECT

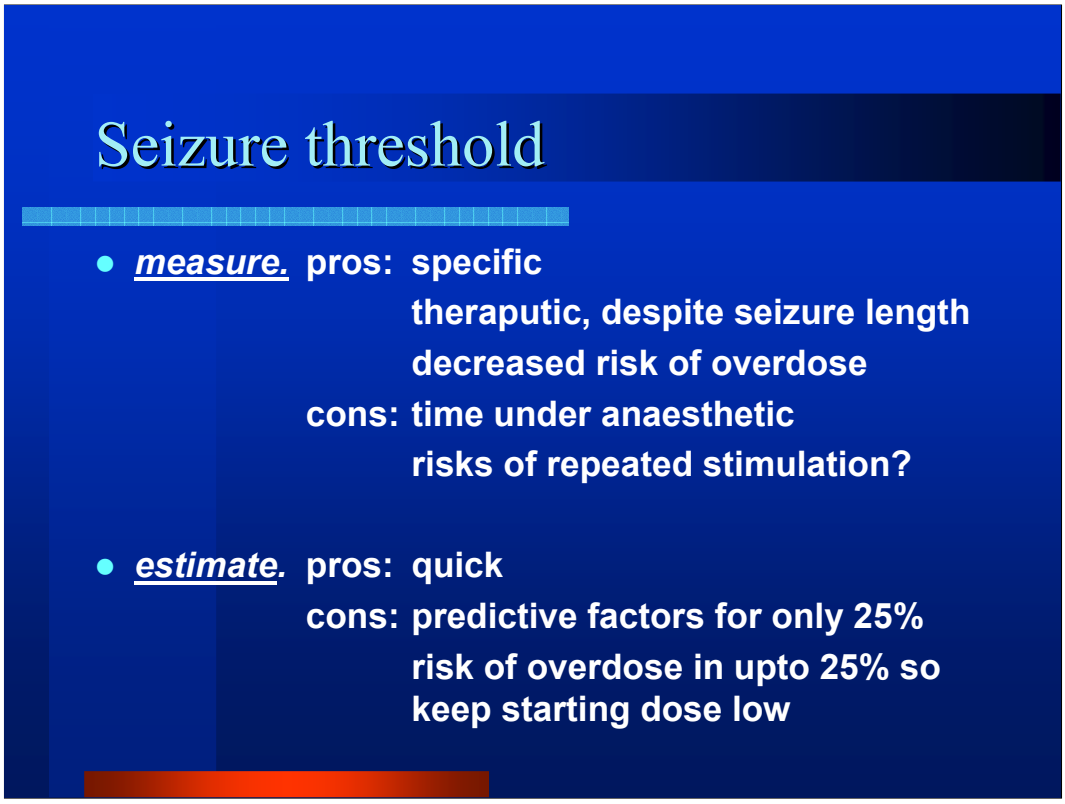
However numbers in studies quoted so far are small and so results are inconclusive at this stage.

Given the reduction in cognitive side-effects, measurement of the seizure threshold may be less critical than with bilateral ECT but unilateral ECT is technically more difficult and involves more of a team effort to ensure correct electrode contact.



This next slide shows more detail on the cognitive side-effects experienced in two studies using different treatment modalities and different doses of electricity at 1.5x, 3x and 5x seizure threshold.

It is important to measure post treatment confusion because this correlates with longer term memory problems. Any cognitive problem should be reported to the ECT team because this may indicate that the dose of electricity is too high. This is especially important in bilateral ECT if the seizure threshold has been estimated rather than measured.



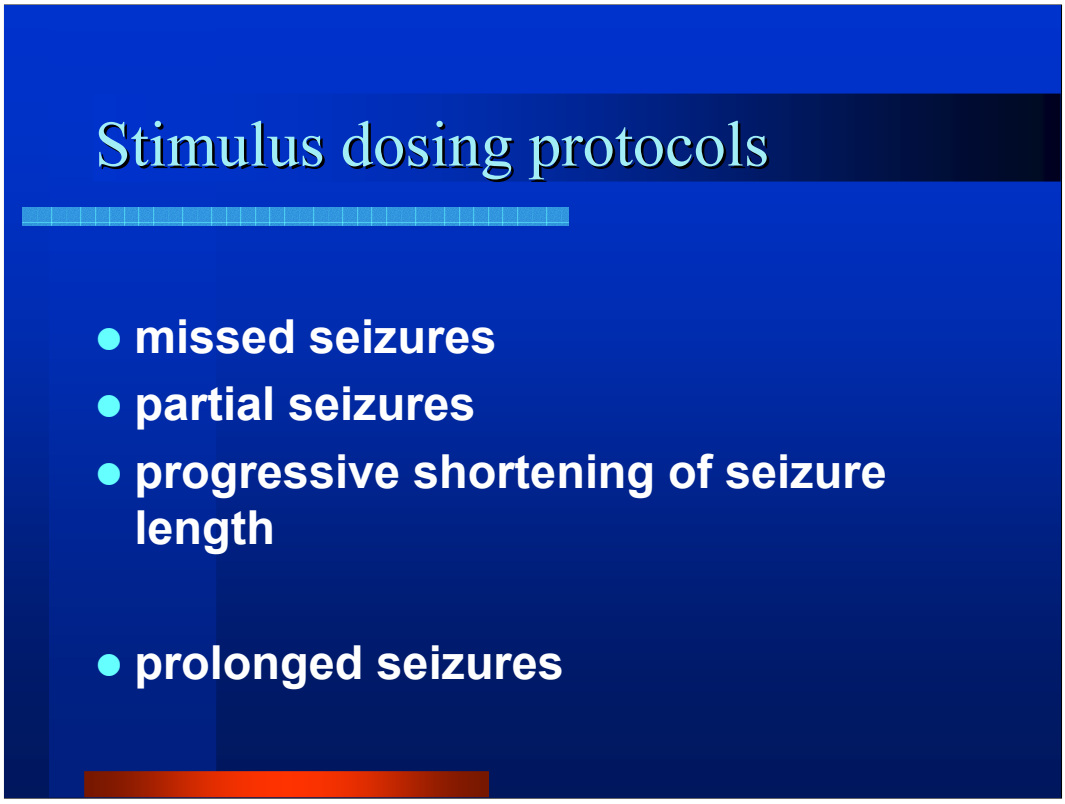
Lets assume that bilateral ECT is being given:

The treatment dose of electricity should be about 1.5 times the patient's seizure threshold.

We therefore need to know what the patient's seizure threshold is.

There are two ways to proceed the pros and cons of which are outlined above.

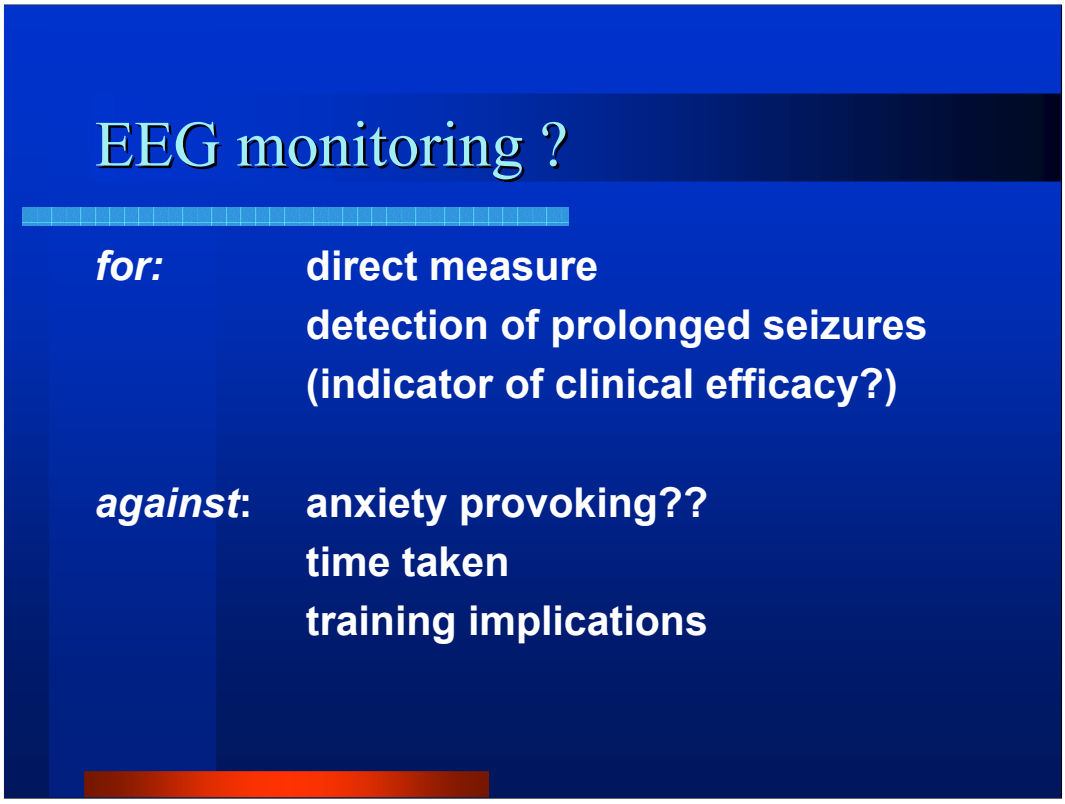
The first is the more technically correct but the debate centres on whether this approach is necessary in routine clinical practice *provided* the estimated dose given assumes a seizure threshold of below 100mC ie the starting treatment dose is around 75-100mC.



All clinics should have protocols to follow in the event of 'missed' or partial seizures.

Any observation that the seizure length is shortening as the course of ECT progresses may suggest that the patient's seizure threshold is rising. This indicates a need to increase the machine output in order to maintain an adequate treatment dose.

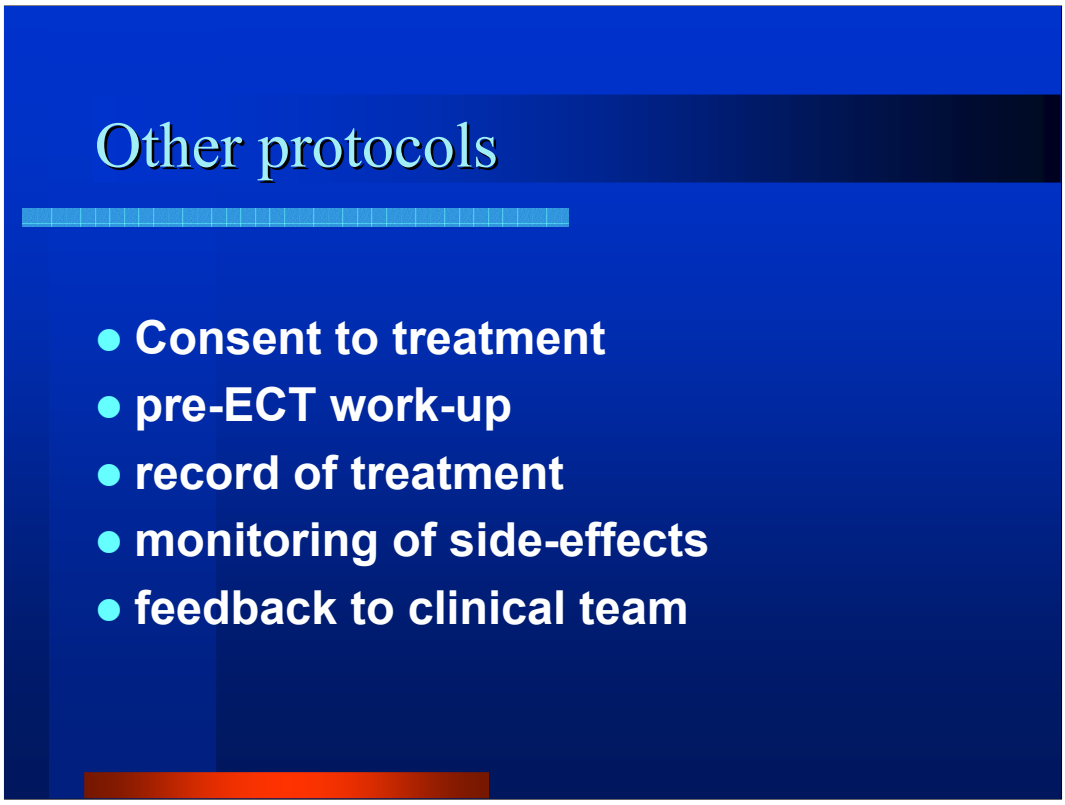
Any seizure continuing beyond 120 seconds of motor activity or 150 seconds of EEG activity should be terminated by IV medication. It is important to decide beforehand who is responsible for this.



There are now published studies which report that between 0 - 6% of patients experienced a prolonged seizure on EEG monitoring that was not detected by direct observation.

Therefore for reasons of safety the next ECT handbook will recommend that EEG monitoring should be available in all clinics.

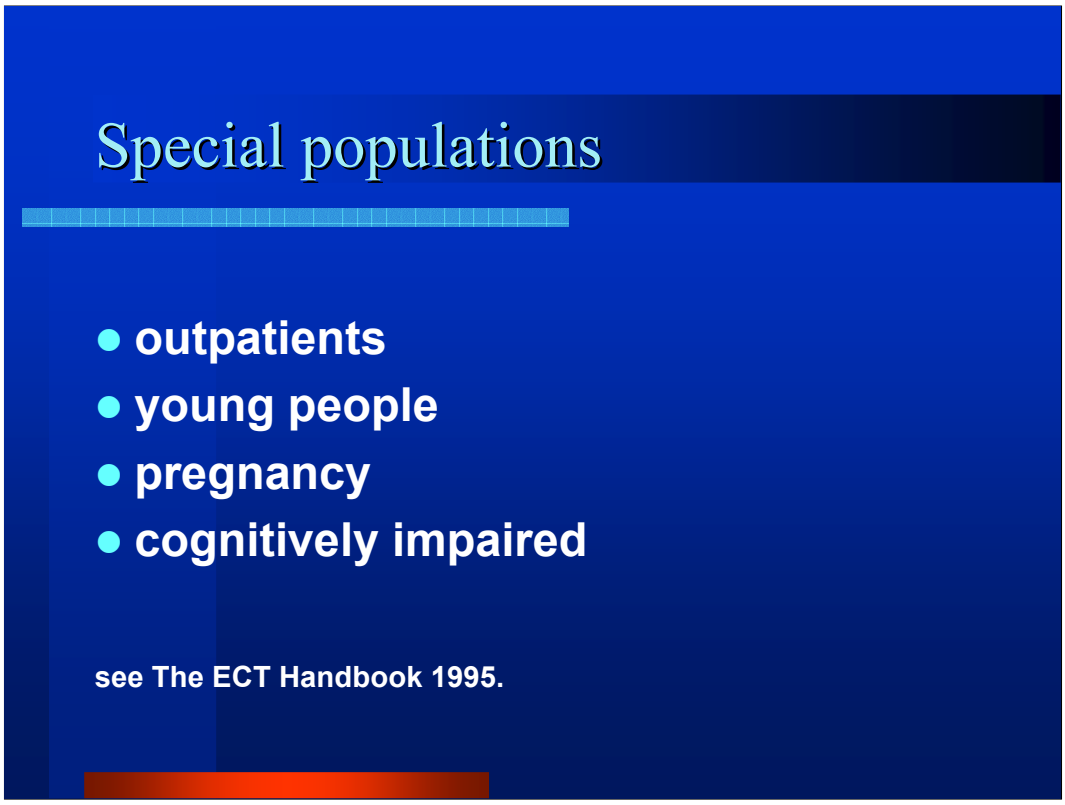
There is some early evidence suggesting that EEG changes can indicate clinical efficacy but studies need to be replicated before conclusions drawn.



Communication before and after ECT is vital.

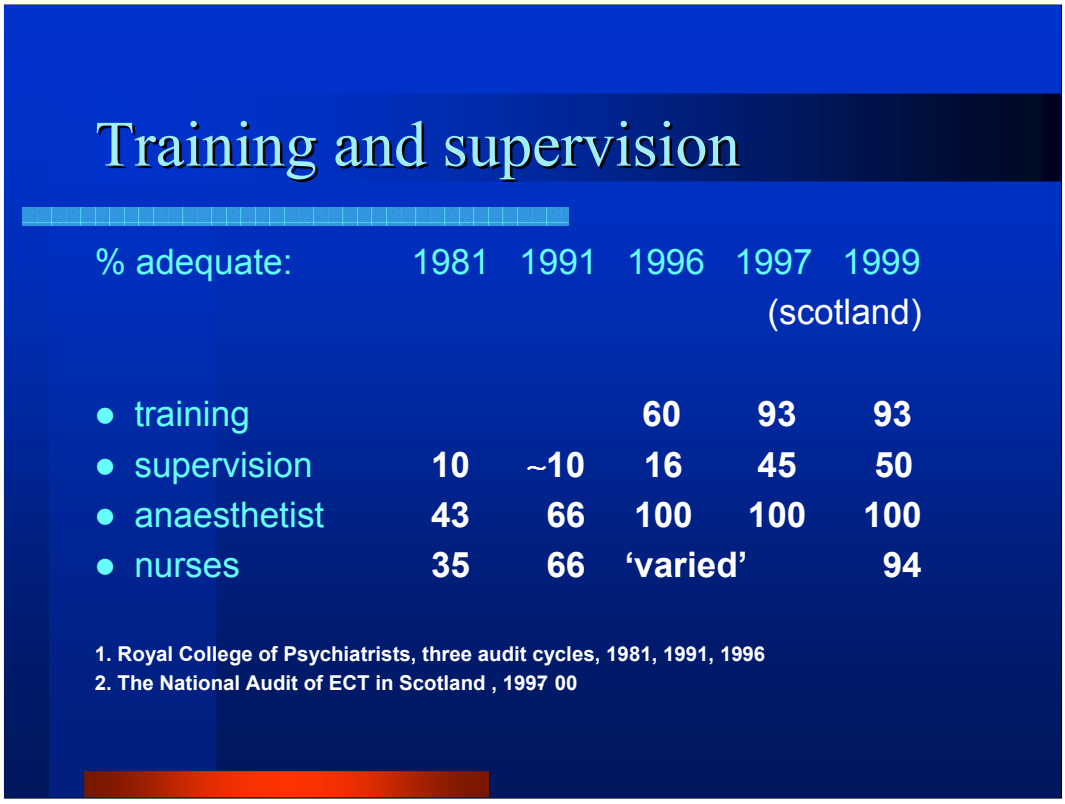
This should involve the patient (and any advocate of their choice) and members of the ECT and clinical multi-disciplinary teams.

This list covers some of the topics.



The ECT handbook gives advice on certain 'special populations' who might receive ECT.

The revised edition of the handbook will contain expanded sections on 'day case' and maintenance ECT focusing on issues of responsibility and assessment.



This slide, from the national audits of ECT since 1981, summarises ECT staffing.

A Mental Health Act Commission survey completed in 2001 will show some improvement in England and Wales but the supervision of junior doctors is still an area of concern.

We have suffered because of a lack of dedicated time and probably the lack of importance given to ECT training. This has to change because the administration of ECT is no longer a simple operation and the consultants of tomorrow need to feel confident in making decisions about treatment options.

An accreditation system is being planned for ECT services but a much more satisfying solution for clinicians is to become involved in bringing their own service up to standard.

This is an exciting time in the development of ECT.

Scientific evidence confirms the efficacy of ECT, it is now up to us to make sure that it is given effectively.

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