

PATIENT COMPLIANCE

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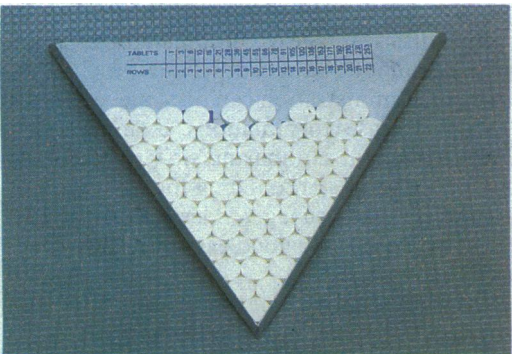
Patients don't always take their drugs in the recommended fashion. This tin contains drugs belonging to a patient and his wife; there are several full bottles of warfarin, antibiotics, and a range of psychotropic drugs.

Doctors assume that when they give a patient a prescription the drug will be taken as directed. But patients do not always take their prescribed drugs, and if there is no therapeutic response to a given dosage regimen poor compliance must be considered. Hippocrates warned that patients may often lie about taking their medicines.

Up to 20% of patients fail to collect their prescribed drugs within one month of issue and are therefore non-compliant from the start.¹ Even patients who collect their drugs may not take them. Rates of compliance have been variously estimated at between 10% and 90% and depend on many factors, including the enthusiasm of the doctor, the disease being treated, and the patient's perception of the importance of the disease.²

Methods of assessing compliance

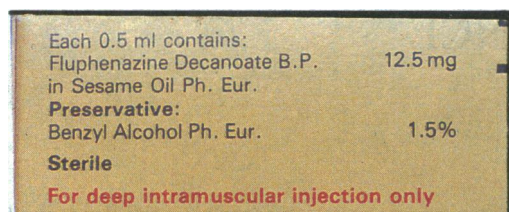
Methods of assessing compliance		
Method	Description	Comments
Tablet counting		
Discrepancy count	The number of tablets dispensed is known, the remaining tablets are counted	Patient is aware of observation and may dispose of remaining tablets
Discrepancy estimate	The number of tablets dispensed is known, the patient is asked whether any more are required before the next visit	Patient is not aware of being closely observed but the count is less accurate
Recording devices		
Medication monitor	A uranium source and photographic film record the regularity with which the drug is removed	Primarily used in research. Both methods presuppose that the removal of the drug implies that the drug has been taken
Silicon chip recorder	A silicon chip recorder is incorporated into the bottle cap and activated whenever the cap is removed	
Measuring drug or added compound in plasma/urine/faeces		
Drug	The concentration of drug is measured directly — for example, plasma phenytoin concentration	Variations may be due to pharmacokinetic differences and not compliance. Primarily used in research. May be misleading if the drug is taken only on the day of measurement
Inert marker	A compound such as riboflavin or phenol red is incorporated into the drug formulation and can be measured in the urine	
Colour changes	For example, iron colours faeces black, rifampicin turns urine red	
Measuring pharmacological effect	For example, pupil size with pilocarpine, exercise heart rate with β adrenoceptor antagonists	



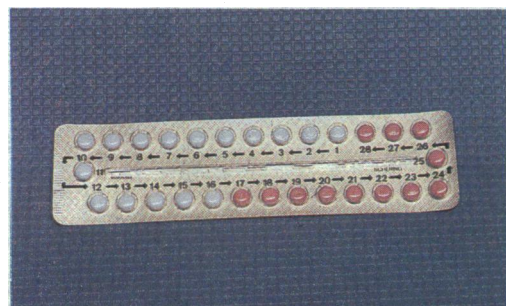
Tablet counting device. You may get some idea of compliance by counting the number of tablets in the bottle and comparing this with the prescribed number of tablets.

Caron and Roth showed that doctors could not predict their patients' compliance more accurately than by chance³; so if compliance is to be accurately assessed specific methods must be used. Direct questioning can sometimes be useful in establishing whether a patient is compliant. Patients are more willing to admit defaulting if questioned tactfully—for example, "Have you managed to take all the tablets?" rather than "Have you missed any tablets?" Having an objective means of assessing compliance may be very helpful in difficult cases and is vital in drug trials. Methods of assessing compliance include:

- Tablet counting
- Recording devices
- Measuring the concentration of the drug in body fluids
- Measuring a marker substance added to the drug
- Measuring the pharmacological effect.



Some medicines are formulated in special oils. After deep intramuscular injection the drug is released slowly into the body over a few weeks. Compliance with medication can thus be ensured by regular administration in the outpatient department.



Calendar packs remind patients when to take their medicines.

Examples of useful combinations of drugs

- Iron with folic acid during pregnancy
- Rifampicin with isoniazid in tuberculosis
- A thiazide with a potassium sparing diuretic in heart failure

Examples of bad combinations of drugs

- Potassium with diuretics
- Amitriptyline 12.5 mg with chlorthalidone 5 mg

Compliance may be improved in four ways.

(1) By ensuring compliance

- A single dose can be given by the doctor or nurse—for example, gonorrhoea can be treated by a single intramuscular dose of procaine penicillin
- A depot formulation suitable for implantation or intramuscular injection can be given at specified regular intervals in the outpatient department—for example, in the treatment of schizophrenia fluphenazine decanoate is given as a depot intramuscular injection at regular intervals (for example, fortnightly)
- The patient can be supervised while taking the drug—for example, during treatment in hospital, by parents giving medicines to their children, visitors giving drugs to relatives, and a district nurse giving medicines to elderly people.

(2) By removing barriers to compliance

- The palatability of medicines can be improved—for example, by flavouring medicines for children (such as banana flavoured antibiotics) or by using slow release formulations to prevent unpalatable medicines from being tasted (such as potassium chloride)
- Elixirs can be used instead of tablets, especially in young children or in elderly people, who might have difficulty in swallowing large tablets. Examples of drugs which may successfully be given in this way are potassium chloride, digoxin, and benorylate
- If a certain formulation causes adverse effects change to another—for example, if ferrous sulphate causes diarrhoea slow release iron formulations can be tried, although iron given in this way may be less effective
- Blister calendar packs for oral contraceptives or β blockers help patients to remember to take the drug.

(3) By simplifying therapeutic regimens

- (a) By reducing the number of tablets a patient has to take
- (b) By reducing the frequency of administration.

It may be possible to reduce the number of tablets a patient has to take by avoiding or discontinuing unnecessary drugs and by using a combination of drugs in a single tablet. The chief disadvantage of combined formulations is that the individual drug dosages cannot be adjusted.

A reduction in the frequency of administration can be achieved by using so called long acting (actually slow release) formulations. Examples include slow release theophylline formulations for asthma and slow release morphine for chronic pain. Another means of reducing the frequency of administration is to use a larger dose than usual given less frequently. High dose ampicillin for urinary tract infections is a good example. Two doses of 3 g are as effective as a seven day course.

Tailoring drug dosages to the individual patient to minimise adverse effects is especially important in prophylaxis and in asymptomatic conditions such as hypertension and hyperlipidaemia.



There are many information leaflets available to help patients take their drugs.

Patients bringing tablets at each visit presents opportunities for:

- Making sure that patients have all the drugs they should have and in the correct strengths
- Demonstrating the correct method of using an inhaler
- Ensuring that glyceryl trinitrate is kept in a dark bottle with a foil lined cap and no cotton wool padding
- Monitoring compliance

(4) By educating the patient

Educating patients about the nature of their condition and the necessity and aims of treatment is known to improve compliance in certain conditions (for example, glaucoma and diabetes mellitus). Patients' perception of their own health, however, may be more important than how well they understand their underlying illness, and there is evidence that intensive education programmes do not necessarily improve compliance.¹ None the less, education of the patient is always to be encouraged, and if it does improve compliance then so much the better.

Compliance can also be improved to some extent by rewarding compliant patients with praise and by reminding and encouraging patients whose compliance is poor. Patients can also be helped by information leaflets, such as have been proposed by the Royal Pharmaceutical Society for eye drops, eye ointments, ear drops, nose drops, pessaries, and suppositories.

All patients should be encouraged to bring their tablets with them at each visit as this allows the doctor to know exactly what drugs the patient is taking, to identify precisely any drugs that the patient could not otherwise tell him or her about or whose dosage is uncertain, and (to some extent) to monitor compliance. Having the tablets in front of you can be very helpful in sorting out some of the practical aspects of drug treatment.

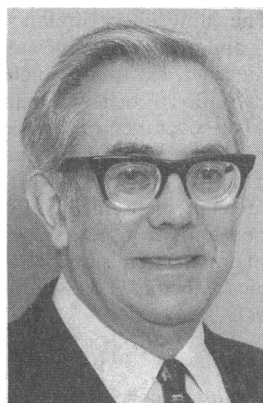
Other ways of helping

Finally, patients usually find it helpful to have a clearly written list of their current drugs with dosages and frequency of administration. Clear labelling on medicine bottles also helps.

- 1 Rashid A. Do patients cash prescriptions? *BMJ* 1982;284:24-6.
- 2 Griffith S. A review of the factors associated with patient compliance and the taking of prescribed medicines. *Br J Gen Pract* 1990;40:114-6.
- 3 Caron HS, Roth HP. Patients' cooperation with a medical regimen. Difficulties in identifying the noncooperator. *JAMA* 1968;203:922-6.
- 4 Sackett DL, Haynes RB, Gibson ES, Hackett BC, Taylor DW, Roberts RS, *et al*. Randomised clinical trial of strategies for improving medication compliance in primary hypertension. *Lancet* 1975;i:1205-7.

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OBITUARY



W Sniper

W SNIPER FFARCS

Of his 38 years in anaesthetics, Woolfred Sniper spent 25 at Glasgow's Victoria Infirmary. He pioneered the use and teaching of techniques to relieve chronic pain; the establishment of the present network of pain relief clinics in Glasgow owed much to his enthusiasm for the subject.

His first consultant post was at Stobhill Hospital, where he did much to organise formal teaching of juniors. After five years he moved to the Royal Alexandra Infirmary in Paisley as consultant in administrative charge. In his final consultant post, at the Victoria Infirmary, he continued his teaching and organisational roles as well as running the anaesthetic department's library. Perhaps his greatest contribution, however, was in pain relief. His interest in the use of nerve blocks to relieve pain in cancer and post-operative pain led to an interest in chronic pain, and in 1975, with a colleague, he started the first outpatient service for patients with chronic pain in Glasgow. He became a founder member of the Glasgow Pain Group in 1976 and for many years was a member of the Intractable Pain Society of Great Britain and Ireland (now the Pain Society).

Woolfred, who was proud of his Jewish heritage, devoted considerable time to charitable work in the Jewish community in Glasgow. He enjoyed only a relatively short retirement before being overtaken by gastric cancer and is survived by his wife, Doreen, to whom he was married for 38 years. — J H MAULE

Woolfred Sniper, formerly a consultant anaesthetist at the Victoria Infirmary and associated hospitals, Glasgow, died 9 June aged 67. Born Glasgow, 20 June 1925; educated Queen's Park School, Glasgow, and Glasgow University (MB, ChB 1948). Registrar and senior hospital medical officer at Victoria Infirmary, Glasgow, then senior registrar and consultant at Stobhill Hospital, Glasgow, and consultant at Royal Alexandra Infirmary, Paisley.

P FORGACS MD, FRCP

Paul Forgacs's interest in chest disease prompted him to take a post as superintendent of Kettlewell Sanatorium, where he introduced an accelerated programme for patients with tuberculosis. With the advent of antituberculous drugs and the increasing understanding of respiratory function he set up a laboratory at Joyce Green Hospital solely to analyse the results of respiratory function tests, and this later moved to the Brook Hospital, where he practised until his retirement.

A prolific writer, he was particularly interested in lung sounds, and his interpretation of their causes shed new light on Laennec's classification. In his youth he had studied flute and piano at conservatoire level, and he used the knowledge acquired then in applying physical principles to the noises produced in the lungs: his logical explanations of the crackles and wheezes were a boon to students and chest physicians everywhere. He travelled widely lecturing on this subject, being fluent in many languages. A gifted teacher, he