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Cystic fibrosis

This issue's special feature, on which these questions are based, was commissioned from independent authors. The Life-long Learning scheme is supported by an educational grant from Mayne Pharma but the company has no editorial input. The scheme is open to all pharmacists. The information in the box below (right) should help readers to identify knowledge gaps and undertake continuing professional development. Readers are also invited to complete the questions overleaf on cystic fibrosis, to test their knowledge of the articles, and send their answers, together with a stamped and addressed A5 envelope, to:

**Life-long Learning — Cystic fibrosis
Hospital Pharmacist
1 Lambeth High Street
London SE1 7JN**

Entries must be received by Monday, 25 July. Results will be returned with a certificate of completion.

Mayne Pharma is offering a place as part of its delegation to the European Association of Hospital Pharmacists conference in Geneva in spring 2006 to the entrant who achieves the highest marks overall in this series of exercises. The best six scores from the eight exercises in the series (November 2004 – July/August 2005) will



be taken into consideration. This is the seventh set of questions.

The runner-up will receive registration and expenses for the *Hospital Pharmacist* conference this autumn. Third and fourth place, respectively, will receive Pharmaceutical Press vouchers and British Society for the History of Pharmacy china mugs. Further details on this scheme can be found in *Hospital Pharmacist* (2004;11:436) and at www.pjonline.com/noticeboard/lifelong.

Your name, address and scores will be held on a database for the purpose of awarding prizes. Should you wish your details not to be held in this way, please tick the box. If you do this, you will be sent a certificate, but you will be ineligible for a prize.

Name _____

College member: Yes No

RPSGB registration number: _____

Address: _____

Post code: _____

Continuing education

This article is accredited as suitable for continuing education (CE) by the College of Pharmacy Practice. Completion of the questions will count towards the CE requirements of College members. Should you wish us to pass your scores to the College for this purpose, please tick the box (top right) showing that you are a College member.

Completion of the questions entitles undergraduates to one point towards the Professional Development Certificate, a joint initiative between the British Pharmaceutical Students' Association and the College.



Continuing professional development

Identify knowledge gaps

- ◆ To understand the symptoms and diagnosis of cystic fibrosis
- ◆ To understand the pharmacological management of the multi-system manifestations of cystic fibrosis
- ◆ To understand the rationale for different antibiotic regimens used in patients with cystic fibrosis and the implications of multiple drug use in a life-long condition

Act

- ◆ Read the articles in this issue
- ◆ Test your knowledge by answering the multiple-choice questions on cystic fibrosis overleaf

Evaluate

- ◆ What have you learnt?
- ◆ How has it added value to your practice?
- ◆ What will you do now and how will this be achieved?

The Royal Pharmaceutical Society's areas of competence for pharmacists are listed in "Plan and record", (available at www.rpsgb.org/education). The assistance of the UK Cystic Fibrosis Pharmacist Group is acknowledged in producing the CPD elements of this month's special feature. Further information on CPD can be found in articles in the February issue of *Hospital Pharmacist* (2005;12:65–72).



To answer the questions, tick either the True or False column

	True	False
1. Regarding the epidemiology of cystic fibrosis:		
a) Incidence in the African population is one in 50,000 live births		
b) One person in four people in the UK are carriers of a gene for the disease		
c) Incidence in the Caucasian population is one in 2,500 live births		
d) A patient born today with adequate pancreatic function would have a life expectancy of 30–40 years		
e) Incidence in the Oriental population is one in 100,000 live births		
2. The cystic fibrosis transmembrane regulator protein is:		
a) Synthesised in a class I mutation		
b) Expressed at the cell membrane in a class IV mutation		
c) Subject to defective conductance of non-chloride ions in a class VI mutation		
d) Synthesised in a class III mutation		
e) Synthesised in a normal form in a class II mutation		
3. Bacterial organisms which are known to commonly cause respiratory infections in infants with cystic fibrosis include:		
a) <i>Staphylococcus aureus</i>		
b) <i>Pseudomonas aeruginosa</i>		
c) <i>Escherichia coli</i>		
d) <i>Haemophilus influenzae</i>		
e) <i>Klebsiella oxytoca</i>		
4. Common symptoms of cystic fibrosis include:		
a) High concentrations of sodium in sweat		
b) Chronic productive cough		
c) Obesity		
d) Production of viscous mucous		
e) Impaired spermatogenesis in men		
5. In the non-drug treatment of cystic fibrosis :		
a) A lung transplant is thought appropriate when the forced expiratory volume in one second drops below 70 per cent of that which is predicted		
b) Gene therapy has not yet been shown to be effective		
c) Fat intake should be restricted to reduce the incidence of steatorrhoea		
d) Physiotherapy is only regarded as appropriate in some patients		
e) Iron supplementation should be routinely recommended		
6. Regarding vitamin and pancreatic enzyme supplementation in cystic fibrosis :		
a) Fat soluble vitamins should be supplemented in patients with pancreatic insufficiency		
b) Vitamin K should be supplemented as phytomenadione		
c) Vitamin K plays a role in bone formation		
d) The dose of pancreatic enzymes to be taken depends on the patient's weight		
e) All pancreatic enzyme preparations are licensed for use in children under 15 years of age		
7. In the treatment of <i>Pseudomonas aeruginosa</i>:		
a) When the organism is first isolated, the patient should be treated with ciprofloxacin for two weeks		
b) Patients colonised with this organism should have a two week course of co-amoxiclav at home to take when they have a "cold" to prevent secondary bacterial infection		
c) Patients can be given nebulised antibiotics such as colistin and tobramycin		
d) Chronic colonisation is associated with a more rapid decline in lung function		
e) Patients chronically colonised should be treated with intravenous antibiotics every three or four months		
8. Regarding the antibiotic tobramycin:		
a) It is licensed at a dose of 10mg/kg once daily		
b) The TOPIC study provides evidence to support use of once daily tobramycin in patients with cystic fibrosis		
c) It is as effective as a once-daily dose as a three-times-daily regimen		
d) Measuring trough levels is unnecessary with once-daily dosing		
e) Once-daily doses can be given as a slow bolus		
9. Regarding treatment of allergic bronchopulmonary aspergillosis:		
a) Voriconazole has better oral bioavailability than itraconazole		
b) Prednisolone should be stopped after two weeks		
c) Enteric coated prednisolone should be used		
d) Liver function tests should be performed annually for patients on itraconazole		
e) Itraconazole liquid containing cyclodextrin should be used in patients to optimise absorption		
10. Patients with cystic fibrosis:		
a) Are at risk of cumulative toxicity from repeated aminoglycoside exposure		
b) Are less likely to suffer from asthma		
c) Are at increased risk of allergy to antibiotics as a result of multiple courses		
d) Should receive lower doses of antibiotics as a result of altered drug handling		
e) Should provide regular sputum samples or cough swabs for microbial culture and sensitivity		

