

# Management of burns: Texts

## Text A

### Burn depth

Burn injuries are classified according to how much tissue damage is present.

#### 1 Superficial partial thickness burns (also known as first and second degree)

Present in most burn wounds. Injuries do not extend through all the layers of skin.

#### 2 Full thickness burns (also known as third degree)

- Burn extends into the subcutaneous tissues
- Underlying tissue may appear pale or blackened
- Remaining skin may be dry and white, brown or black with no blisters
- Healing associated with considerable contraction and scarring.

#### 3 Mixed depth burns

Burns are frequently of mixed depth. The clinician should estimate the average depth by the appearance and the presence of sensation.

Resuscitation should be based on the total of second and third degree burns, and local treatment should be based on the burn thickness at any specific site.

## Text B

### Fluid resuscitation

If the burn area is over 15% of the TBSA (Total Body Surface Area) in adults or 10% in children, intravenous fluids should be started as soon as possible on scene, although transfer should not be delayed by more than two cannulation attempts. For physiological reasons the threshold is closer to 10% in the elderly (>60 years).

### Suggested regimen for fluid resuscitation

#### Adults

Resuscitation fluid alone (first 24 hours)

- Give 3–4ml Hartmann's solution (3ml in superficial and partial thickness burns/4ml in full thickness burns or those with associated inhalation injury) per kg body weight/% TBSA burned. Half of this volume is given in the first 8 hours after injury and the remaining half in the second 16-hour period

#### Children

Resuscitation fluid as above plus maintenance (0.45% saline with 5% dextrose):

- Give 100ml/kg for the first 10kg body weight plus 50ml/kg for the next 10kg body weight plus 20ml/kg for each extra kg



## Text C

### Management for Burns

1. Assess the patient status: airway, breathing, circulation, IV access.
2. Assess the burn depth and extent. A sheet can be placed on burns during this time.
3. Cooling: Remove jewellery or hot clothing. Limit inflammation and pain by using cool water, cool saline soaked gauze or a large sheet in the case of a large wound. Cool the wound not the patient, taking care not to cause hypothermia.
4. Pain Control: Acetaminophen usually helpful but may need to use opiates such as codeine.
5. Check immunization status and update tetanus if necessary.
6. If possible, begin fluid resuscitation.
7. Debridement of blisters – there are some differences of opinion regarding breaking of blisters.
  - a. Some suggest leaving intact because the blister acts as a barrier to infection and others debride all blisters.
  - b. Most agree that necrotic skin should be removed following blister ruptures.
8. Application of antibiotics in the form of ointment. Should always be used to prevent infection in any non-superficial burns.
9. Apply suitable dressing to the wound area.

## Text D

### Adult Analgesic Guidelines

The following table provides recommended short term (<72 hours) oral analgesia guidelines for the management of burn injuries. Aim for pain scores of 4 or less at rest. Analgesia should be reviewed after 72 hours and adjusted according to pain scores. Patient management should be guided by individual case and clinical judgement.

Pain score elicited from patient (Scale 1 - 10)		
Mild Pain Pain Score 1 - 3	Moderate Pain Pain Score 4 - 6	Severe Pain Pain Score 7 - 10
Recommended analgesia:	Recommended analgesia in addition to column 1:	Recommended analgesia in addition to column 1 & 2:
Paracetamol 1g 4 x daily	Tramadol 50 – 100mg 4 x daily	Strong opioids Oxycontin SR 10mg (2 x daily)
<b>And if needed:</b> Naproxen 250mg 2 x daily	<b>If above unsuccessful:</b> Endone (immediate release oxycodone) 5 – 10mg (2 - 4 hourly)	Endone, 2 - 4 hourly as needed
	Review in 72 hours	Review in 72 hours If pain cannot be controlled with oral medications, consider admission to burns unit.

### Paediatric Analgesia Guidelines

- Paracetamol (15 mg/kg (max 90 mg/kg/day) orally or per rectum (PR))
- Non Steroidal Anti-Inflammatory Drugs
  - naproxen 5 - 10 mg/kg (max 500 mg) 12-hrly orally or PR
  - ibuprofen 2.5 - 10 mg/kg (max 600 mg) 6-8hrly orally
- Opioids (codeine 0.5 - 1 mg/kg orally)

**END OF PART A**  
**THIS TEXT BOOKLET WILL BE COLLECTED**



## Part A

**TIME:** 15 minutes

- Look at the four texts **A-D**, in the separate **Text Booklet**.
- For each question **1-20**, look through the texts, **A-D**, to find the relevant information.
- Write your answers in the spaces provided in this **Question Paper**.
- Answer all the questions within the 15-minute time limit.
- Your answers should **only** be taken from texts **A-D** and must be correctly spelt.

### Management of burns: Questions

#### Questions 1-5

For each question, **1-5**, decide which text (**A**, **B**, **C** or **D**) the information comes from. You may use any letter more than once.

In which text can you find information about

- 1 age-related considerations for initial treatment of burns injuries? \_\_\_\_\_
- 2 the risks involved in certain treatments? \_\_\_\_\_
- 3 when to start thinking about specialist treatment options? \_\_\_\_\_
- 4 treatment informed by patient self-assessment? \_\_\_\_\_
- 5 how to categorise the severity of a burn? \_\_\_\_\_

#### Questions 6-13

Complete each of the sentences, **6-13**, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

- 6 Classification of burn injuries depends on the amount of \_\_\_\_\_ caused.
- 7 Patients recovering from third degree burns are likely to experience a great deal of shrinkage and \_\_\_\_\_ of their skin.
- 8 When evaluating mixed depth burns, you should take into account how the burn looks and whether there is \_\_\_\_\_ in the affected area.
- 9 You should cool burn injuries by taking off any \_\_\_\_\_ or jewellery that the patient is wearing.



- 10 When cooling the wound, make sure that you don't put the patient at risk  
of \_\_\_\_\_.
- 11 The patient may require a \_\_\_\_\_ booster, depending on when they  
were last immunised.
- 12 You should consider leaving \_\_\_\_\_ undisturbed, as these may help  
prevent infection.
- 13 You should apply ointments containing \_\_\_\_\_ to all deeper burns.

### Questions 14-20

Answer each of the questions, **14-20**, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

- 14 In the case of mixed depth burns, what factor determines the local treatment to give?  
\_\_\_\_\_
- 15 What is the maximum number of tries recommended for attaching a drip at the scene of a burns  
incident?  
\_\_\_\_\_
- 16 How much resuscitation fluid should a child receive per kilo over 20kg?  
\_\_\_\_\_
- 17 Before attaching a fluid resuscitation drip to a 9-year-old burns patient, what percentage of the body  
needs to be affected?  
\_\_\_\_\_
- 18 What additional analgesic is recommended in the first instance for a patient with a moderate level of  
pain?  
\_\_\_\_\_
- 19 What route should be used to administer ibuprofen to children?  
\_\_\_\_\_
- 20 After how long should a patient's pain relief regime be re-evaluated?  
\_\_\_\_\_

**END OF PART A**  
**THIS QUESTION PAPER WILL BE COLLECTED**



## Part B

In this part of the test, there are six short extracts relating to the work of health professionals. For **questions 1-6**, choose the answer (**A**, **B** or **C**) which you think fits best according to the text.

Fill the circle in completely. Example: **(C)**

**(A)**

**(B)**

**(C)**

1. Doctors are advised to break patient confidentiality if

- (A)** failure to do so would put other people in danger.
- (B)** they inform the patient of their intention in advance.
- (C)** a patient refuses to disclose information relevant to their care.

### Patient Confidentiality

Confidentiality is central to trust between doctors and patients. Without assurances about confidentiality, patients may be reluctant to seek medical attention or to give doctors the information they need in order to provide good care.

However, faced with a situation in which a patient's refusal to consent to disclosure leaves others exposed to a risk so serious that it outweighs the patient's and the public interest in maintaining confidentiality, or if it is not practical or safe to seek the patient's consent, information should be disclosed promptly to an appropriate person or authority. The patient should be informed in advance that the doctor will be disclosing the information, provided this is practical and safe, even if the doctor intends to disclose without the patient's consent.



2. According to the guidance notes, all staff involved in transferring patients from critical to general care must

- (A) obtain all necessary consent from any interested parties.
- (B) ensure that the patient's personal care plan is also transferred.
- (C) make arrangements for ongoing co-operation once the transfer is complete.

## Transfer of patients

### 1.15

The critical care area transferring team and the receiving ward team should take shared responsibility for the care of the patient being transferred. They should jointly ensure that:

- there is continuity of care through a formal structured handover from critical care area staff to ward staff (including both medical and nursing staff), supported by a written plan;
- the receiving ward, with support from critical care if required, can deliver the agreed plan.

### 1.16

When patients are transferred to the general ward from a critical care area, they should be offered information about their condition and encouraged to actively participate in decisions that relate to their recovery. The information should be tailored to individual circumstances. If they agree, their family and carers should be involved.



3. The memo says failure to screen a patient for malnutrition may result in

- A a change in overall health.
- B a prolonged stay at the care facility.
- C care providers being unaware of an issue.

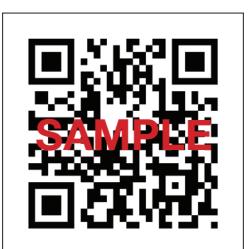
**Memo**

**To:** Hospital staff

**Re:** Nutrition screening

This is to remind staff of the importance of nutrition screening to identify problems which may go unrecognised and, therefore, remain untreated during the patient's hospital stay. Nutrition screening should occur on admission and then weekly during the patient's episode of care; at least monthly in slower stream facilities; or if the patient's clinical condition changes.

All patients should have their weight and height documented on admission, and weight should continue to be recorded at least weekly. Patients whose score is 'at risk' on a validated screening tool or whose clinical condition is such that their treating team identifies them as at risk of malnutrition should be referred to a dietitian for a full nutrition assessment and nutrition support as appropriate.



4. This policy document states that nurses

- (A) must sign a paper form if they want any new stock.
- (B) can order medicines from the pharmacy in some cases.
- (C) should speak to the pharmacist if a drug is needed urgently.

### **Stock requisitioning**

If stock levels of a medicine are low, the nurse should firstly liaise directly with their ward-based team to arrange urgent stock replenishment. If the ward-based team is unavailable, the nurse should complete a request form online and email it to the pharmacy stores. Paper-based ordering systems are available (e.g. the ward medicines requisition book); however these should not be relied on if ward stock is urgently needed.

“At risk medicines” – Diazepam/Codeine Phosphate/Co-codamol – may only be ordered for stock when a paper requisition is written. Paper-based requisitions should be complete, legible and signed, and then sent to the pharmacy department.

Wards/clinical areas using Mediwell 365 cabinets will have orders transmitted automatically to Pharmacy on a daily basis, as stock is used.



5. The extract from the guidelines states that

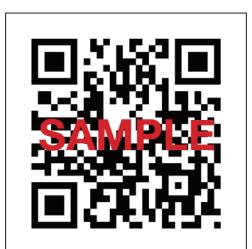
- (A) ICU staff can be seconded to other wards.
- (B) only a consultant can refer a patient to the ICU.
- (C) the ICU is fully responsible for a patient in their care.

## **6.2 Intensive Care Unit (ICU)**

**6.2.1** Unplanned admissions to the ICU need a referral at consultant level. In exceptional circumstances, referrals will be discussed with the Ward Registrar looking after the patient if a delay in referral to ICU would lead to the rapid deterioration of a patient.

**6.2.2** All patients discussed with the ICU staff but not admitted remain under the care of the primary team and as such they remain responsible for reviewing and escalating care should deterioration occur.

**6.2.3** We encourage collaborative patient-centred care. However the ICU is defined as a closed unit. This means that when patients are admitted into the ICU, they are under the care of the ICU team. It is expected that members of the primary referring team will liaise daily with the ICU team to discuss the patient's management. However, it is up to the ICU team to make final decisions.



6. When dealing with patients following a safety incident, staff must avoid

- (A) saying anything until the facts have been established.
- (B) speculating on the possible causes of the incident.
- (C) contradicting what has been said by other staff.

#### Patient Safety Incidents

Information about a patient safety incident must be given to patients and/or their carers in a truthful and open manner by an appropriately nominated person. Patients want a step-by-step explanation of what happened that considers their individual needs and is delivered openly. Communication must also be timely – patients and/or carers should be provided with information about what happened as soon as practicable. It is also essential that any information given is based solely on the facts known at the time. Healthcare staff should explain that new information may emerge as an incident investigation is undertaken, and patients and/or their carers will be kept up-to-date with the progress of an investigation. The Duty of Candour Regulations require that information be given as soon as is reasonably practicable and be given in writing no later than 10 days after the incident was reported through the local systems.



## Part C

In this part of the test, there are two texts about different aspects of healthcare. For **questions 7-22**, choose the answer (**A**, **B**, **C** or **D**) which you think fits best according to the text.

(A)  
(B)  
(C)  
(D)

Fill the circle in completely. Example:

### Text 1: Allergic to eating

Lucy Smith was strolling through Canberra last July. Within moments she couldn't stand, gripped by pain so severe she feared she would pass out – the first sign of paralysing diarrhoea. This dramatic episode turned out to be caused by a newly-acquired food allergy – to red meat. Food allergies affect one per cent of the adult population of Australia. Most don't hit with the same force as Lucy's, but the physical and mental impact can nonetheless turn a person's life upside down, and may even be life-threatening. Lucy deduced that she was allergic to red meat, one of the less common allergenic foodstuffs. Only after several further attacks of varying severity, was her suspicion eventually confirmed by a specialist.

An allergy, according to immunologists, is the immune system over-reacting to a substance that would ordinarily be considered benign. However the term 'allergy' is used more loosely by the general public. People say they are allergic to a substance because it brings about some kind of adverse reaction in their bodies, some of which can be severe and may resemble true allergic reactions, but unless the immune system itself is directly involved, experts categorise it as 'intolerance'. Constant sneezing, itchy eyes or throat and inner ears, asthma, rashes, and diarrhoea can all be signs of food allergies. Intolerance can bring on similar warning signs as well as things such as headaches, bloating, and general lethargy. Over time, some allergy sufferers lose weight because there are so few foods they can eat. Of course the social implications are huge too – eating is a major social event.

To diagnose a food allergy, immunologists use a 'skin-prick test' in which a drop of a commercially extracted allergen is placed on the skin and the first couple of skin layers are pricked with a lancet. If a person is allergic, the immune system is stimulated sufficiently to produce a mosquito bite-like bump within fifteen minutes. This testing method is, however, somewhat unreliable in detecting intolerances, because, while not fully understood, they operate via a different biological mechanism possibly involving chemicals in food irritating nerve endings in the body. They are generally diagnosed by following an exclusion diet in which suspect foods are gradually reintroduced and their effects monitored.



According to paediatric immunology specialist Dr Velencia Soutter, around six to eight per cent of babies are affected by allergy. While most children will outgrow them, some actually grow into them. The mechanisms that provoke an allergy remain a grey area. Soutter says: 'It's like throwing a match into a fireworks factory. Hit the right place and you set off a chain reaction. Miss it and the match just fizzles out. That difference between lighting up or fizzling out isn't well understood.'

Broadly speaking, Dr Soutter says the ideal recipe for a food allergy is to be born of allergic parents and then to have a high exposure to an allergenic foodstuff. But there are so many exceptions to **this rule** that other forces are clearly at work, and who's to say what 'high' exposure is anyway? In contrast, the so-called hygiene hypothesis suggests too low an exposure to allergens is to blame. The idea is that today's clean environments leave our immune systems with too little to do, encouraging them to turn on the wrong culprits. Clearly, the field of immunology has only just scratched the surface of understanding.

Interesting flakes of information are gradually being peeled off that surface, however. There is evidence that allergens can be transferred through a mother's breast milk to her child, and possibly also through the placenta. Since the immaturity of babies' immune systems might make them more vulnerable to an inherited allergic tendency, women in allergic families could be advised to avoid certain foods during pregnancy and breastfeeding. It is possible, though, that some allergies or intolerances are purely imaginary and this can also have consequences for children. One US study found that parents sometimes avoided foods to which they erroneously believed their children were allergic, occasionally leaving the children severely underfed.

In Australia, the number of people with genuine and severe allergies is growing. Some doctors speculate whether the increased amount of new chemicals in the environment and in food is perhaps damaging immune systems – making them more prone to react adversely. Much more research needs to be done to provide evidence for that hypothesis. Anecdotally though, some experts say that staying off processed foods resolves the problem in a significant number of cases. Dr Soutter speculates that a rise in peanut allergy cases makes up the bulk of the increase in food allergies. Greater exposure has probably allowed more peanut allergies to flourish, she thinks. Peanut consumption per capita is rising. It's a common ingredient in Asian and vegetarian dishes, which have grown in popularity, and the diet-conscious population is increasingly turning to nuts as a source of healthy fats.



## Text 1: Questions 7-14

7. The case of Lucy Smith highlights the fact that food allergies

- (A) may be difficult to diagnose in certain people.
- (B) are relatively rare in the adult population.
- (C) can cause debilitating symptoms.
- (D) often require urgent treatment.

8. In the second paragraph, what point is made about food intolerances?

- (A) Scientists continue to disagree about their root causes.
- (B) The symptoms are indistinguishable from those of allergies.
- (C) They can have an unpredictable impact on the person affected.
- (D) The distinction between them and allergies is not widely appreciated.

9. The phrase 'via a different biological mechanism' in the third paragraph explains

- (A) the way the skin-prick test works in diagnosing food intolerances.
- (B) how the presence of food impurities impacts on the skin-prick test.
- (C) why the skin-prick test may not accurately diagnose food intolerance.
- (D) how food allergies are triggered by substances used in the skin-prick test.

10. Dr Soutter uses the image of a fireworks factory to illustrate that

- (A) the factors triggering an allergic reaction still remain unclear.
- (B) allergic attacks can occur suddenly any time in a person's life.
- (C) it's difficult to foresee which family member an allergy will affect.
- (D) the identification of a food allergy is basically a matter of chance.



11. In the fifth paragraph, what point is made about the two hypotheses mentioned?

- (A) They both appear to be credible.
- (B) They directly contradict each other.
- (C) They fail to define their terms adequately.
- (D) They should both be studied in more depth.

12. What does the phrase 'this rule' in the fifth paragraph refer to?

- (A) the likelihood of having an inherited allergy to certain foods
- (B) the type of diet in which food allergies more commonly occur
- (C) the degree of contact with allergens needed to trigger a reaction
- (D) the order of events most commonly found prior to allergic attacks

13. What does the sixth paragraph suggest about the transference of allergies between mother and child?

- (A) It is only possible with particular individuals.
- (B) It can result in instances of malnourishment.
- (C) It may be avoidable if certain precautions are taken.
- (D) It is most likely to take place before the baby is born.

14. Dr Soutter suggests that the rise in cases of one allergy may be partly due to

- (A) attempts to improve eating habits.
- (B) changes in food manufacturing methods.
- (C) the adoption of new agricultural practices.
- (D) increased levels of harmful substances in the atmosphere.



## **Text 2: Prenatal origins of heart disease**

Heart disease is the greatest killer in the developed world today, currently accounting for 30% of all deaths in Australia. A concept which is familiar to us all is that traditional risk factors such as smoking, obesity, and genetic make-up increase the risk of heart disease. However, it is now becoming apparent that another factor is at play – a developmental programming that is predetermined before birth, not only by our genes but also by their interaction with the quality of our prenatal environment.

Pregnancies that are complicated by sub-optimal conditions in the womb, such as happens during pre-eclampsia or placental insufficiency, enforce physiological adaptations in the unborn child and placenta. While these adaptations are necessary to maintain viable pregnancy and sustain life before birth, they come at a cost. The biological trade-off is reduced growth, which may in turn affect the development of key organs and systems such as the heart and circulation, thereby increasing the risk of cardiovascular disease in adult life. Overwhelming evidence in more than a dozen countries has linked development under adverse intrauterine conditions leading to low birth weight with increased rates in adulthood of coronary heart disease and its major risk factors – hypertension, atherosclerosis and diabetes.

The idea that a foetus's susceptibility to disease in later life could be programmed by the conditions in the womb has been taken up vigorously by the international research community, with considerable efforts concentrating on nutrient supply across the placenta as a risk factor. But that is just part of the story: how much oxygen is available to the foetus is also a determinant of growth and of the risk of adult disease. Dr Dino Giussani's research group at Cambridge University in the UK is asking what effect reduced oxygen has on foetal development by studying populations at high altitude.

Giussani's team studied birth weight records from healthy term pregnancies in two Bolivian cities at obstetric hospitals and clinics selectively attended by women from either high-income or low-income backgrounds. Bolivia lies at the heart of South America, split by the Andean Cordillera into areas of very high altitude to the west and areas at sea-level to the east, as the country extends into the Amazon Basin. At 400m and almost 4000m above sea-level, respectively, the Bolivian cities of Santa Cruz and La Paz are striking examples of this difference.

Pregnancies at high altitude are subjected to a lower partial pressure of oxygen in the atmosphere compared with those at sea-level. Women living at high altitude in La Paz are more likely to give birth to underweight babies than women living in Santa Cruz. But is this a result of reduced oxygen in the womb or poorer nutritional status?



What Giussani found was that the high-altitude babies showed a pronounced reduction in birth weight compared with low-altitude babies, even in cases of high maternal nutritional status. Babies born to low-income mothers at sea-level also showed a reduction in birth weight, but the effect of under-nutrition was not as pronounced as the effect of high altitude on birth weight; clearly, foetal oxygenation was a more important determinant of foetal growth within these communities. Remarkably, although one might assume that babies born to mothers of low socio-economic status at high altitude would show the greatest reduction in birth weight, these babies were actually heavier than babies born to high-income mothers at high altitude. It turns out that the difference lies in ancestry.

The lower socio-economic groups of La Paz are almost entirely made up of Aymara Indians, an ancient ethnic group with a history in the Bolivian highlands spanning a couple of millennia. On the other hand, individuals of higher socio-economic status represent a largely European and North American admixture, relative newcomers to high altitude. It seems therefore that an ancestry linked to prolonged high-altitude residence confers protection against reduced atmospheric oxygen.

Giussani's group also discovered that they can replicate the findings observed in Andean pregnancies in hen eggs: fertilised eggs from Bolivian birds native to sea-level show growth restriction when incubated at high altitude, whereas eggs from birds that are native to high altitude show a smaller growth restriction. Moving fertilised eggs from hens native to high altitude down to sea-level not only restored growth, but the embryos were actually larger than sea-level embryos incubated at sea-level. The researchers could thereby demonstrate something that only generations of migration in human populations would reveal. What's more, when looking for early markers of cardiovascular disease, the researchers discovered that growth restriction at high altitude was indeed linked with cardiovascular defects – shown by an increase in the thickness of the walls of the chick heart and aorta. This all suggests the possibility of halting the development of heart disease at its very origin, bringing preventive medicine back into the womb.



## Text 2: Questions 15-22

15. What information can be found in the first paragraph?

- (A) reference to some recent findings relating to heart disease
- (B) indication of the greatest risk factor associated with heart disease
- (C) mention of a misconception about the chief causes of heart disease
- (D) figures showing the country with the highest mortality rate from heart disease

16. When the writer uses the word 'cost' in the second paragraph she is referring to

- (A) overwhelming evidence.
- (B) placental insufficiency.
- (C) viable pregnancy.
- (D) reduced growth.

17. In the third paragraph, what does the author suggest about the work of the international research community on this subject?

- (A) Their focus has been too narrow.
- (B) Some of their studies may be flawed.
- (C) There is nothing original about their research.
- (D) They were overly keen to seize on a particular idea.

18. What was the aim of the study described in the fourth paragraph?

- (A) to compare neonatal records between the UK and Bolivia
- (B) to assess the relative significance of two risk factors for newborns
- (C) to find a link between birth weight and predisposition to heart disease
- (D) to determine the likelihood of high-altitude babies being carried to full term



**19.** What assumption was proved wrong by the results of the study?

- (A) Lower-income mothers generally give birth to lower weight babies.
- (B) A baby born at high altitude will typically weigh less than one born at sea level.
- (C) Levels of oxygen have a greater impact on birth weight than nutritional status does.
- (D) There is a correlation between prenatal oxygen levels and predisposition to heart disease.

**20.** In the sixth paragraph, what is suggested about the inhabitants of La Paz?

- (A) The altitude affects all socio-economic groups in a similar way.
- (B) There is a high degree of ethnic diversity at all levels of society.
- (C) Most residents have a shared ancestry going back two thousand years.
- (D) Poorer residents have a genetic advantage over those with higher incomes.

**21.** The purpose of the information in the sixth paragraph is to provide

- (A) an alternative approach to a puzzle.
- (B) a confirmation of a hypothesis.
- (C) an explanation for a finding.
- (D) a solution to a problem.

**22.** What advantage of the research involving hen eggs is mentioned in the final paragraph?

- (A) the availability of supplies
- (B) the simplicity of the procedure
- (C) the reliability of the data obtained
- (D) the speed with which results are seen

**END OF READING TEST  
THIS BOOKLET WILL BE COLLECTED**

