This article, the second in a six-part series on first-aid procedures, explains how to respond to a generalised tonic-clonic seizure.

A seizure is caused by a sudden burst of electrical activity in all or part of the brain (Epilepsy Action, 2007). Approximately 2–10% of the population will experience a seizure at some time in their life (NICE, 2002). There are over 40 types of seizure, and individuals may experience more than one type. Recurrent seizures are defined as epilepsy. Sudden unexpected death in epilepsy accounts for approximately 500 deaths annually (NICE, 2002). It is therefore important to understand the first-aid treatment of a casualty having a generalised tonic-clonic seizure (GTCS).

The aim of this practical procedure is to describe the first-aid treatment of a GTCS.

CAUSES AND CHARACTERISTICS
A number of causes are associated with GTCS, including epilepsy (the most common cause), head injury, some poisons (including alcohol and ecstasy), alcohol withdrawal, cerebral hypoxia and cerebral hypoglycaemia. Typical characteristics of a GTCS include:

- Sudden loss of consciousness (can be preceded by crying out) and collapse;
- Rigidity (tonic phase) – lasting for around 10 seconds, the body is stiff, the elbows are flexed and the legs are extended;
- Breathing stops; central cyanosis, particularly noticeable around the mouth;
- Clenching of the jaw – saliva may accumulate at the mouth, which could be bloodstained if the casualty’s tongue or lip have been bitten;
- Convulsive movements (clonic phase) – for the duration of 1–2 minutes, there is violent generalised rhythmical shaking;
- Incontinence;
- Variable period of unconsciousness after the event. The casualty may feel tired and fall into a deep sleep, or feel dazed, confused, disoriented, frightened and may have slurred, incomprehensible speech (Jevon, 2006).

FIRST-AID TREATMENT

- If necessary, ensure the emergency services are alerted (Fig 1);
- Ensure it is safe to approach the casualty;
- Protect the casualty from injury. Ensure the surrounding space is clear and remove any objects that pose a risk of injury (Fig 2);
- Loosen tight clothing around the neck;
- Cushion the casualty’s head with something soft such as a pillow, jumper or
jacket. Alternatively, support the head with the palms of your hands (Fig 3);
- Check for an epilepsy identity card/MedicAlert bracelet (Fig 4);
- Note how long the seizure lasts (Fig 5);
- When the seizure has stopped, check airway, breathing and circulation. If the casualty is breathing, place in the recovery position (Fig 6); if not, begin resuscitation;
- Wipe away any saliva;
- Check whether the casualty has sustained any injuries;
- Calmly reassure the casualty;
- Stay with the casualty until a complete recovery has been made (Epilepsy Action, 2007; St John Ambulance et al, 2006; National Society for Epilepsy, 2004).

It is important not to arouse, restrain or move the casualty during the seizure – unless moving is necessary for safety. Inserting objects into the casualty’s mouth to prevent tongue or lip biting should also be avoided as this may result in broken teeth. The casualty should not be given anything to eat or drink until fully recovered (Epilepsy Action, 2007; NSE, 2004).

WHEN TO CALL EMERGENCY SERVICES
Alert the emergency services if:
- This is the casualty’s first seizure;
- One tonic-clonic seizure follows another without the casualty regaining consciousness between seizures (status epilepticus);
- The seizure continues for longer than five minutes;
- The casualty incurs an injury;
- The casualty requires urgent medical attention (Epilepsy Action, 2007).

REFERENCES
SIGN (2003) Diagnosis and Management of Epilepsy in Adults. Edinburgh: SIGN.

and how much time elapsed before it was possible to resume normal activities.
If possible, the casualty should be asked about any mood change, unusual sensations, confusion or other warning signs experienced before the seizure (NSE, 2004).