

## Countermeasure for Anaphylaxis Using the EpiPen®

Center for Health Sciences and Counseling

- Anaphylaxis is a severe, potentially life-threatening allergic reactions.
- A proper use of the therapeutic drug EpiPen® can remarkably improve anaphylaxis symptoms.
- Missing the right timing to use an EpiPen® can lead to increase the risk of death.
- If a patient is unable to self-inject an EpiPen®, a bystander should inject it for the patient and save his/her life\*.
- The handling of EpiPen® injections is very simple and can be done by anyone.
- Call an ambulance *after* giving an EpiPen® injection for the patient.

\*There is no legal responsibility for procedures aimed at saving lives, regardless of their outcome.

The term "anaphylaxis" has become well known as one of the adverse reactions to the COVID-19 vaccine. Anaphylaxis is, in a nutshell, "an allergic reaction severe enough to be life-threatening," and can be caused not only by vaccination, but also by other drugs, bee venom, food, and many other causes. Skin symptoms such as urticaria, respiratory symptoms such as runny nose and cough, and gastrointestinal symptoms such as nausea and diarrhea are common, but when these are accompanied by breathlessness, lifelessness, and decreased level of consciousness, it is necessary to recognize that the patient is in a "life-threatening" state.

Anaphylaxis requires a rapid countermeasure because the time from an onset to a potentially life-threatening state can be short (sometimes only a few minutes). The most important countermeasure is the appropriate use of the EpiPen®, an adrenaline self-injector, which can remarkably improve the symptoms. However, if the proper timing of EpiPen use is missed, it could lead to increase the risk of serious outcomes, including death.

EpiPen is a "self-injecting drug" that patients (those who have experienced an anaphylaxis in the past) are prescribed by their physicians, and the patients carry the EpiPen and would inject themselves when the symptoms occur. In rare cases, however, patients might not be able to inject themselves depending on the progress or severity of their symptoms. In such cases, it is extremely important that a bystander

injects for the patient (see also "Note" below). Call an ambulance *after* giving the EpiPen® injection for the patient.

According to a survey implemented during an annual checkup for students at Kyushu University (all students, including graduate students), 50 to 60 students have been prescribed by a physician and carried an EpiPen®. The majority (more than 90%) of the causes of anaphylaxis were food, and although each individual is careful of avoiding the causative food, the possibility of eating it without noticing could not be excluded. Some people have a history of a specific type of anaphylaxis, in which symptoms are triggered by a physical exercise, even though they are asymptomatic after eating the food. In the Ito campus, which neighbors a mountain forest, bee stings during extracurricular activities can also be a concern.

The handling of the EpiPen® injection is very simple and can be done by anyone. Remove **the blue safety cap** and press **the orange tip** vertically against the skin slightly outside of the thigh until you hear a "click" (you can do this through the patient's clothing as shown below) and hold for 5 seconds. When the EpiPen® is withdrawn after injection, the needle tip automatically retracts into the cover for safety.



- ✓ The above described procedure is also illustrated on the EpiPen® itself.
- ✓ The following website provides explanations, including a video (in Japanese).  
<https://www.epipen.jp/attention.html?ref=%2Fhowto-epipen%2Fuse.html>
- ✓ An EpiPen® demo unit (trainer for practice) is available at main office (Ito Center) and branch offices (Ito West, Hospital, Ohashi, and Chikushi) of the Center for Health Sciences and Counseling (CHC), so please contact us if you would like to experience an actual handling.
- ✓ We also offer training sessions using the demo device. If you wish to attend, please contact us at the CHC main office:

Tel. 092-802-5881 (ext. 90-5881)

**Note**

Suppose an example case, where a student who has an EpiPen® suffered from an anaphylaxis during a class. He/she has taken the EpiPen® out of his/her bag, but he/she is unable to inject himself/herself due to the symptoms. In such a case, the relationship between a professor/teacher and the student may not be considered a simple patient-bystander one, and if the professor/teacher did not administer an EpiPen® injection for the student, he/she potentially holds a responsibility to take a first aid for the student. In general (not limited to EpiPen®), if a professor/teacher did not take any action in case of sudden illness during class, etc., the individual may be held civilly liable (there are several precedents in which the duty of a teacher to protect children and students was disputed).

On the other hand, there is an official opinion from the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Health, Labor and Welfare that the act of giving an EpiPen® injection for a patient does not violate Article 17 of the Medical Practitioners Act, and even if an adverse event should occur, there is no criminal or civil liability (Article 37-1 Emergency evacuation of the Penal Code, Chapter 3 Article 698 Emergency Office Administration of the Civil Code).