

Student A: (sigh)...

Student B: (sigh)...

Student A: Hey! What's wrong with you?

Student B: (sigh)...I failed the exam and I think I'll probably have to repeat F.5.

Student A: Oh dear, me too.

Student A + Student B: (sigh)...

Gangster 1: Hey, guys, both of you seem despaired. Haha, don't be disappointed. I think you probably need some...

(Handing Student A + Student B a packet of cigarettes)

(Student B is trying to take one...)

Student A: What? Cigarettes? Shame on you! The dioxins it contains are carcinogenic, apart from damaging human bodies, the environment can be badly destroyed too.

Gangster 2: What are you talking about? Stop frightening us!

Student A: I'm not joking. Dioxins (二噁英) are a group of toxic chemical contaminants. In addition to smoking, dioxins are also produced in industrial processes including making paper, melting metals, and also burning processes like explosion, and burning rubbish.

Student B: Oh yes! I get it. I remember I learnt it in the last Chemistry lesson.

(Showing the model of dioxins)

Dioxins consist of two benzene rings(苯環) that connected by oxygen atoms (氧原子). To make it simple, benzene ring is a ring structure which is composed of six carbon atoms joined in a ring. Besides, there are several chlorine atoms (氯原子) attaching to each benzene ring, and that's the structure of dioxins.

Student A: Due to this structure, dioxins are stable. That means they seldom react with other chemicals. As a result, they accumulate in the soil, and finally they accumulate along the food chain....

Gangster 2: Wait, I don't understand. What do you mean by 'accumulating along the food chain'?

Student B: That means when animals eat the plants that grow in this soil, they take in dioxins as well, and dioxins store in their bodies for a long time due to their stability.

Student A: Unfortunately, humans are at the top of the food chain. When we eat pork, beef, or even eggs, we are taking in these chemicals as well.

Student B: Yes, the fatty tissue of animals should be avoided as dioxins are soluble in fat. Short-term exposure of humans to high levels of dioxins may result in skin troubles, such as chloracne, resulting in patchy darkening of the skin. (showing the relevant picture)

Student A: On the other hand, long-term exposure is linked to impairment of the immune system (免疫系統). It is also harmful to the nervous system (神經系統), and your liver. Besides, as dioxins can change your hormone level, the reproductive system(生殖系統) will be badly affected. Moreover, the more we consume, the higher risk of suffering from cancer.

Gangster 2: It seems horrible. But actually, is there any means to clear up all the dioxins?

Student A: I'm sorry to tell you that once dioxin is produced, there is no way to remove it.

Student B: So we'd better sensibly reduce the amount of dioxins on the Earth due to human activities.

Gangster 2: But, for us, what can we do?

Student A: Um...as a teenager, there are a few things we can do. As I mentioned before, dioxins are produced when burning rubbish, so we can avoid producing rubbish, especially plastics, in order to reduce the amount of rubbish that need to be burnt.

Gangster 1: Ok, it seems quite sensible. Everyone is responsible to save the Earth. Let's stop producing rubbish. One more thing, stop buying things that we don't need so that we throw away less rubbish. Tell everyone we know to stop smoking too.

(Throw the cigarette away)

Gangster 2: Then, what should we do now?

Student B: Let's go back to the library and do something more productive!

Student A: Doing revision! Right?

Narrator: To be honest, dioxins is said to be the most toxic chemicals known to science. More than 90% of human exposure is through food consumption. As dioxins are soluble in fats and can be stored in fatty tissues for a long period, those who eat fatty food such as meat and dairy products, or fish and shellfish are most vulnerable. Therefore, food contamination monitoring system is required for the government to ensure citizens' health. Meanwhile, we all need to be alert when choosing foods. Thank you.
