

## 2. BIRD FLU

**1. Brainstorming. What are the main causes of death in the world today? Make a list.**

**2. Discuss these questions in small groups.<sup>1</sup>**

What do you think is the most serious problem in the world today?

What are some things that cause stress? What are some ways to deal with stress?

What is a disaster? What are some different kinds of disasters?

How can you help after a natural disaster? Do you know someone who has done any volunteer work?

What was it? Did he or she enjoy it?

Have you ever been in a disaster? How do you think you would react in a disaster?

Have you ever given money to a to charity? Why or why not?

What do you know about drugs? What are some dangerous drugs? What are their effects?

Have you ever had or seen a car accident?

What do you know about the SARS virus? What do you know about AIDS? What about bird flu?

**Article: BIRD FLU'S HUMAN-ATTACK PATHWAY REVEALED<sup>2</sup>**

**2. Pronounce correctly**

virus	surface	major	macrophage
lethal	throat	identify	gut
pneumonia	lungs	tissue	breath in
contagious	alveolus	hijack	

**3. Make sure you understand**

cause	sneeze	tiny	predict
strain	vary	repair	affect
autopsy	site	maintain	

**4. Decide, whether the sentences are true or false. If they are false, say what is true.**

- |    |   |     |
|----|---|-----|
| a) | It is easy for people to catch H5N1 bird flu virus                  | T/F |
| b) | 103 people have died of bird flu so far                             | T/F |
| c) | The H5N1 virus binds to sugars on the surface of cells in the nose. | T/F |
| d) | Oxygen enters the blood through alveoli.                            | T/F |
| e) | The bird flu virus spreads by sneezing out and breathing in.        | T/F |
| f) | Lectins are synthetic molecules.                                    | T/F |
| g) | Researchers used two types of lecithin.                             | T/F |
| h) | H5N1 virus binds in the deep lungs.                                 | T/F |
| i) | H5N1 might affect kidneys and heart.                                | T/F |

**5. Grammar**

**It / The virus is hard for people to catch.**

- a) Je snadné, aby to pochopil.
- b) Je obtížné, aby předpověděli mutace viru.
- c) Je nepravděpodobné, že by to vdechl.
- d) Je snadné, aby se virus šířil.
- e) Je nezbytné, aby vědci zjistili, jak se virus šíří.
- f) Je běžné, že je virus zjištěn v plicní tkáni.
- g) Je běžné, že virus způsobuje zápal plic.

**Listening: INDONESIA BIRD FLU<sup>3</sup>**

*Five more people have been confirmed dead from the virulent H5N1 strain of the bird flu virus in Indonesia. The deaths came as the United Nations warned the Indonesian authorities that they must do more **to combat** the spread of the disease. This report is from Clare Harkey.*

**6. Dictation: Write down the words you can hear.**

**7. Listen and answer the question:** How many people have died in Indonesia so far?

8. Listen again and fill in the gaps:

Indonesia **overtook** Thailand recently as the second **worst-affected** country in the world, after Vietnam, **in terms of** the number of people killed by 1 ..... Thirty people are now **confirmed** as having died in Indonesia. 2..... has been found in **poultry** in the majority of Indonesia's thirty three provinces. Worryingly, the latest **cluster** of deaths was on the island of Sumatra, not Java where all previous **confirmed fatalities** had been 3..... All the Sumatran victims were reported to have been in close 4..... to sick **poultry**. The United Nations Food and Agriculture Organisation this week 5..... Indonesia that they it was failing **to combat** the spread of the disease, both **in terms of** controlling animal 6..... and failing **to increase public awareness**. The Indonesian authorities say they are watching the Sumatra **cluster** carefully but there's no **evidence** that the virus was 7..... from human to human.



## **Bird flu's human-attack pathway revealed**

▪ 18:00 22 March 2006 by Debora MacKenzie

Two separate research groups have independently discovered why the H5N1 bird flu virus causes lethal pneumonia in people, but is - so far - hard for people to catch. In the process, they have found a way to predict which mutations might make the virus more contagious, and potentially become a pandemic strain. To date, confirmed human deaths from the disease stand at 103 worldwide

The H5N1 virus binds to sugars on the surface of cells deep in human lungs, but not to cells lining the human nose and throat. So report the two research teams, led by Thijs Kuiken at Erasmus University in Rotterdam, and Yoshihiro Kawaoka at the Universities of Tokyo, Japan and Wisconsin at Madison, US.

This fits the few autopsies that have been performed on H5N1 victims, who had damage to the alveoli - the delicate sacs deep in the lungs, where oxygen enters the blood.

Flu normally travels between people by being sneezed out and breathed in through the nose and throat. Both groups concluded that poor binding of the H5N1 high in the respiratory tract might be why the virus has so far not been able to spread easily between people - a major factor keeping it from becoming pandemic.

### **Deep inside**

The Wisconsin team used lectins - plant molecules that bind to the same complex sugars on the cell surface where the flu virus attaches to cells - to identify how different versions of the sugar molecule vary in humans. They used one lectin specific to the "2,3 form" of the sugar common in birds - which H5N1 is known to prefer, and another specific to the "2,6 form" more common in people.

Testing tissue slices from the human respiratory tract, they found that 2,6 receptors were common in the nose and throat, but 2,3 receptors - H5N1's preferred site - were common in the alveoli.

The Dutch group used the killed H5N1 virus itself, and saw the same pattern as the Wisconsin team, with binding in the deep lungs but not the nose and throat.

### **Repair hijack**

Both groups found these receptors, or viral binding, especially in cells called type 2 alveolar cells. These actively dividing cells repair and maintain the tiny lung sacs, so H5N1's binding of these particular cells might explain why H5N1 pneumonia is so severe. The virus can also hijack the machinery it needs to replicate more easily in these active cells than in neighbouring, non-dividing cells.

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The Dutch team also found binding to alveolar macrophages - white blood cells which can trigger the inflammatory immune reaction, which often kills in pneumonia cases.	10
Their technique might allow scientists to predict what H5N1 could do next. "We will now try to look at what mutations in the virus improve binding in the upper respiratory tract," Kuiken told <b>New Scientist</b> . That could show what mutations to watch for as H5N1 continues to spread around the globe.	11
They will also study which other human tissues H5N1 can bind to. Cases so far suggest it might affect the gut and most worryingly, the brain.	12
Journal reference: <i>Nature</i> (vol 440, p 435) and <i>Science</i> (DOI: 10.1126/science.1125548)	

**9. Work in small groups. Select one of the causes of death in today's world (e.g. AIDS, car accidents, smoking, natural disasters...)**

**Imagine you have been approached by the health service.**

**You have been asked to design an awareness campaign based on one of the health issues.**

**You should work together to brainstorm your ideas. You ought to come up with a slogan and with several ideas what the government, the people etc. could do to solve this problem.**

**You should prepare:**

A slogan (motto of the campaign)

Short description of the problem.

Ideas how to solve the problem.

**You can use modal verbs – e.g.**

The government/the people etc. can / could / should × shouldn't / must / need to (potřebuji) / ought to (měli by) / may (mohou) / might (mohli by) / have to (musí) / had better (měli by raději)

**Then regroup the to make new small groups so that there is a mixture of students from the previous groups. Each student should tell the members of the new group about their campaign and answer questions from the other students. In the en choose the best campaign.**

**Sources:**

<sup>1</sup> Available at <http://iteslj.org/questions/>

<sup>2</sup> Available at <http://www.newscientist.com/article/dn8881-bird-flus-humanattack-pathway-revealed.html>

<sup>3</sup> Adapted from [http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/2006/05/060517\\_bird\\_flu.shtml](http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/2006/05/060517_bird_flu.shtml)

<sup>4</sup> Adapted from Comfort, Jeremy and Utley, Derek: *Effective Presentations*. OUP 2000

Lesson adapted from Milada Pavlovová and BBC Learning English.

## 10. HOMEWORK:<sup>4</sup> Questionnaire

### When you make a presentation:

1. Do you:
  - a. read your presentation
  - b. use notes
  - c. improvise (i.e. talk without preparation)?
  
2. Do you:
  - a. keep eye contact with one person in the audience
  - b. look at all the people in the audience
  - c. look at the floor?
  
3. Do you:
  - a. smile from time to time
  - b. tell an amusing story
  - c. remain serious?
  
4. Do you feel:
  - a. relaxed
  - b. nervous
  - c. terrified?
  
5. Do you:
  - a. walk up and down a lot
  - b. move your arms a lot
  - c. move very little?
  
6. Do you use visual aids:
  - a. sometimes
  - b. all the time
  - c. never
  
7. Do you usually:
  - a. finish your presentation early
  - b. finish on time
  - c. overrun your time?
  
8. Are you a speaker who:
  - a. talks quickly and quietly
  - b. talks with ease (i.e. in a relaxed way)?
  
9. Do you practise your presentation:
  - a. at every possible moment – in the bath/on the bus etc...
  - b. a few times
  - c. once
  
10. Do you:
  - a. enjoy giving presentations
  - b. not mind giving presentations
  - c. hate giving presentations?