

## LESSON 10: FUTURE RESEARCH

1. If you were to decide which branch of science should receive most money on research, what branch would it be? Back up your answer with arguments.
2. Speaking: Work in small groups. Spend some time thinking about developments in each of the areas at different points in the future. Write your ideas into the boxes.<sup>1</sup>

	2015	2050	2200
Chemistry			
Medicine			
Space			
Computers			

3. Now regroup and compare your ideas with people from another group. Which of them is realistic or unrealistic? Then choose the most interesting idea and report to the whole class.

### 4. LISTENING – THE FUTURE OF ALLERGY RESEARCH (From Euronews – Futuris)<sup>2</sup>

#### **Vocabulary:**

diagnosis (n) – diagnóza

allergy reaction (adj+n) – alergická reakce

present in ... (adj + prep) – přítomný v ...

source (n) – zdroj

extract (v) – získat, extrahovat

technological advances (adj.+n) – technologický pokrok

purify (v) – vyčistit, purifikovat

reliable method (adj+n) – spolehlivá metoda

relevant (adj) – relevantní, zásadní

constituent parts (adj+n) – složky

tool (n) – nástroj, přístroj

- a. Watch the beginning of the video (3.38-4.39) and answer these questions:
  - 1) What are the scientists in Vienna working on?
  - 2) What is the patient allergic to?

- b. Now watch the second part (4.39-5.04). Fill in the gaps in the transcript.

With some allergens **present in** several \_\_\_\_\_, it is difficult to \_\_\_\_\_ the **source** of the allergy. It is the work of the researchers to \_\_\_\_\_ the **constituent parts** of the potential food allergen. They have to \_\_\_\_\_, **extract** and **purify** each protein all the better to \_\_\_\_\_ its structure and \_\_\_\_\_. The allergens thus purified make it possible to \_\_\_\_\_ more **reliable methods** of **diagnosis**.

- c. Watch another part (5.04 – 5.53) In Vienna, there is a library of the most common allergens in Europe. Circle the allergens mentioned in the video.

apple, pear, hazelnut, peanut, coconut, mustard, sesame seed, potato, celeriac, cucumber

- d. Watch the rest (5.53-6.46) and explain: What is the future of allergy research?

## 5. ARTICLE: CURRY INGREDIENT FIGHTS CANCER

### Vocabulary

Words you should know: compound (n), protein (n), effects (n), determine (v), rate (n), prevent (v), reduce the risk (v+n)

### New vocabulary

interfere (v) (with cancer cells) – narušit (rakovinné buňky)	suppress (v) - potlačovat
likely (adj - pravděpodobný)	conclude (v) - dojít k závěru
spread (n) – šíření	potent (adj+n) – účinný, mocný
cell (n) – buňka	induce (v) - vyvolat
treat (v) something with something - léčit	investigation (n) – výzkum, vyšetřování
dose (n) - dávka	clinical trial (adj+n) - klinická zkouška
turmeric – kurkuma	batch – dávka

#### a. Read the text quickly and answer this question:

**What types of cancer are mentioned in the text?**

#### b. Read the text once again and find information to fill in the table. Then ask and answer questions in pairs. *E.g. Where was the research done?*

Research Done at:	
Research Lead by:	
Research Reported in:	
Name of Compound:	
Compound Found in:	
The way the compound fights cancer	
Tests done on people	
Relation between the spice and cancer risk in people	

#### c. Cover the text of the article and try to complete the summary below with what you remember

The present article is titled \_\_\_\_\_ and was released at \_\_\_\_\_. It deals with a substance that can fight some types of \_\_\_\_\_. The name of the substance is \_\_\_\_\_ and is found in \_\_\_\_\_. Tests have shown that this substance made \_\_\_\_\_ cancer cells more likely to self-destruct in a process known as \_\_\_\_\_, and also that that the same substance helped stop the spread of \_\_\_\_\_ cancer tumour cells to the lungs of mice. So far the effects of curcumin have been tested in laboratory conditions, but clinical \_\_\_\_\_ are planned.

## Curry Ingredient Fights Cancer<sup>3</sup>

WASHINGTON (Reuters) -- The compound that makes curry yellow could help fight skin cancer, U.S. researchers say.

They said curcumin, found in the spice turmeric, interferes with melanoma cells.

Tests in laboratory dishes show that curcumin made melanoma skin cancer cells more likely to self-destruct in a process known as apoptosis.

The same team has found that curcumin helped stop the spread of breast cancer tumor cells to the lungs of mice.

Bharat Aggarwal of the Department of Experimental Therapeutics at the University of Texas M.D. Anderson Cancer Center in Houston and colleagues treated three batches of melanoma cells, known as cell lines, with curcumin at different doses and for varying times.

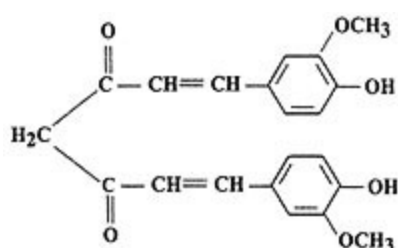
The curcumin suppressed two proteins that tumor cells use to keep themselves immortal, the researchers write in next month's issue of the journal Cancer.

"Based on our studies, we conclude the curcumin is a potent suppressor of cell viability and inducer of apoptosis in melanoma cell lines," Aggarwal's team wrote.

"Future investigation to determine the effects of curcumin in animal models of melanoma and clinical trials are planned."

Earlier research has shown that curcumin, which acts as an antioxidant, can help prevent tumors from forming in the laboratory.

Aggarwal said people who eat plenty of turmeric have lower rates of some cancers, although the spice itself has not been shown to reduce cancer risk in people.



Curcumin: the substance, the plant: *Curcuma longa L* and the spice: turmeric

## 6. DISCUSSION: Talking about science and research

Read these questions. Make sure you understand all of them. You can consult their meaning in pairs:

- a) Which invention/discovery would you most like to be invented/discovered in the future?
- b) "Science is more important than religion in today's world." Do you agree?
- c) Can you imagine yourself working as a scientist?
- d) Are there more men scientists than women scientists in your country? If so, why?
- e) Do you think that in the future science will depend more on computers?
- f) What do you think of scientific tests on animals?
- g) Has science and technology changed society for the better or for the worse? Give examples.
- h) What do you think are the main dangers of scientific progress and technological advances? How can the society be protected from these dangers?

**Now discuss your responses to these questions in small groups.**

**You can use some of these sentences to express agreement or disagreement:**

Agreeing with an Opinion: 😊	Disagreeing with an Opinion: ☹️
My view about this is positive.	I think this idea is impossible/impractical.
I agree with this idea.	I don't agree with this idea.
I agree completely with this idea.	I'm not sure that I agree with this idea.
I agree partially with this idea.	I think this idea is possible, but...
This idea is absolutely right.	This idea is absolutely wrong.
I think this idea is good.	I think it is a bad idea.

It depends. It depends on ...

**Sources:** Lesson adapted from MarieSabolová.

<sup>1</sup> Adapted from BBC Learning English.

<sup>2</sup> Available at <http://www.youtube.com/watch?v=3zrVqwV29V8> Accessed November 23th 2010.

<sup>3</sup> Available at <http://www.lookingglassnews.org/viewstory.php?storyid=1448> . Accessed December 11th 2009.

<sup>4</sup> Adapted from Murphy, Raymond. *English Grammar in Use*. Cambridge: CUP, 2004.

diagnosis (n)	diagnóza
reaction (n)	reakce
present in (adj+prep.)	přítomný v
source (n)	zdroj
technological advances (adj.+n.)	technologický pokrok
purify (v)	vyčistit, purifikovat
reliable method (adj.+n.)	spolehlivá metoda
relevant (adj.)	relevantní, zásadní
constituent parts (adj.+n.)	složky
tool (n.)	nástroj, přístroj
break down (v)	rozkládat, štěpit
isolate (v)	izolovat
analyze (v)	analyzovat
effect (n)	účinek, efekt
determine (n)	určit
spread (n)	šíření
cell (n)	buňka
treat (v) something with something	léčit (něco něčím)
dose (n)	dávka
suppress (v)	potlačovat
conclude (v)	dojít k závěru
potent (adj+n)	účinný, mocný
induce (v)	vyvolat
clinical trial (adj+n)	klinická zkouška
investigation (n)	výzkum, vyšetřování
clinical trial (adj+n)	klinická zkouška
My view about this is positive.	Mám na to pozitivní náhled.
I agree with this idea.	Souhlasím s touto myšlenkou.
I agree completely with this idea.	Naprostou souhlasím s touto myšlenkou.
I agree partially with this idea.	Částečně souhlasím s touto myšlenkou.
This idea is absolutely right.	Tato myšlenka je zcela správná.
I think this idea is good.	Myslím, že je to dobrá myšlenka.
I think this idea is impossible/impractical.	Myslím, že tato myšlenka je nemožná/nepraktická.
I don't agree with this idea.	S touto myšlenkou nesouhlasím.
I'm not sure that I agree with this idea.	Nejsem si jistý, zda s touto myšlenkou souhlasím.
I think this idea is possible, but...	Myslím, že tato myšlenka je možná, ale ...
This idea is absolutely wrong.	Tato myšlenka je zcela špatná.
I think it is a bad idea.	Myslím, že je to špatný nápad.
It depends. It depends on ...	Jak kdy. Závisí to na ...

#### 14. HOMEWORK: Grammar Revision <sup>4</sup>

<b>past simple</b> – minulý čas prostý	<b>past continuous</b> – minulý čas průběhový
<p>I /we/ he/she/it <u>lived</u> in London.</p> <p><b>Negative:</b> <u>didn't live</u></p> <p><b>Question:</b> Where <b>did</b> we/you/they <u>live</u>? he/she/it</p>	<p>I <u>was</u> <u>working</u>.</p> <p><b>Negative:</b> <u>was not (wasn't)</u></p> <p>We/you/they <u>were</u> <u>working</u>. <u>weren't</u></p> <p><b>Question:</b> Where was I working? were we/you/they was he/she/it</p>
<p><b>- odehrálo se a skončilo v minulosti</b> Ptáme se: <i>When? Kdy?</i> <b>typické výrazy:</b> <i>yesterday, last week, in 1998</i> I got up early yesterday. Sam went to the USA last year. When I was young, I had a cat.</p> <p><b>- slovesa vyjadřující stav, modální slovesa</b> like, believe, think, mean, can, need, want ...</p>	<p><b>- děj probíhal v přesně určeném okamžiku v minulosti</b> <i>at 10 o'clock last night, this time yesterday</i> At 10 o'clock last night I was playing chess.</p> <p><b>- dočasné situace</b> We were living with friends because our new flat wasn't ready.</p> <p><b>- právě probíhající děj byl něčím přerušen</b> We were having supper when the phone rang. I was standing at the traffic lights when the accident happened.</p>

#### A. Complete the sentences:

- 1) Tom burnt his hand while he *was cooking dinner*.
- 2) The doorbell rang while I .....
- 3) We saw an accident while we .....
- 4) Mary fell asleep while she .....
- 5) The television was on but nobody .....

#### B. Choose the right tense – past simple or past continuous.

- 1) Jane *was waiting* (wait) for me when I *arrived* (arrive).
- 2) What .....(you/do) this time yesterday? I was asleep.
- 3) How fast .....(you/drive) when the accident .....(happen)?
- 4) John ..... (take) a photograph of me while I .....(not / look).
- 5) We were in a very difficult position. We ..... (not/know) what to do.
- 6) I haven't seen Alan for ages. When I last .....(see) him, he ..... (try) to find a job in London.
- 7) I ..... (walk) along the street when suddenly I .....(hear) footsteps behind me. Somebody ..... (follow) me. I was frightened and I .....(start) to run.
- 8) When I was young, I ..... (want) to be a bus driver.
- 9) ..... (you/go) out last night? No, I was too tired.
- 10) A car ..... (stop) and the man ..... (get) out.
- 11) At 8 o'clock yesterday evening I ..... (have) dinner with some friends.