HOME ASSIGNMENT

MAGENTISM HELPS STEER CAPSULE ENDOSCOPE

- **Read the text below. Then complete the activities.**

Magnetism helps steer capsule endoscope

By Hank Hogan

Retrieved January 2008 from: http://www.photonics.com/Content/ReadArticle.aspx?ArticleID=34763. Last accessed: February 22, 2016.

Capsule endoscopes look and, once swallowed, act like pills. Pushed along by natural forces, they traverse the body, snapping pictures as they go. The esophagus, small intestine and colon can be imaged, allowing doctors to look for disease. Given Imaging Ltd. of Yokneam, Israel, the leading maker of capsule endoscopes, cites studies showing that patients have a higher level of satisfaction with such devices than they do with traditional endoscopes because the "camera pills" offer convenience and comfort and because recovery is immediate.

However, current FDA-approved capsule endoscopes can't hold steady, can't reverse direction and can't swivel about on command. They may someday be able to do so, thanks to a collaboration with Given Imaging, Israelitisches Krankenhaus in Hamburg, Germany, Imperial College London and Fraunhofer Institute for Biomedical Engineering in St. Ingbert, Germany. The group used an external magnet to hold a capsule endoscope steady in a volunteer and achieved an important preliminary outcome, said team member Frank Volke.

A full stop

"We were able to stop the camera for about 10 minutes in the esophagus without producing any pain or discomfort," he noted. Volke is head of the magnetic resonance group at Fraunhofer.

The collaboration was part of a European research project designated by the acronym NEMO. Today's capsule endoscopes pack a light source, a battery, video cameras and associated electronics in a pill-size enclosure. While traveling through the body, the capsule takes an image several times a second, which it then transmits to a belt worn by the patient. Such imaging and transmission can go on for hours, with as many as 50,000 images collected over an 8-h period.

The challenge for the group was adding magnet-driven maneuverability while preserving camera functionality and wireless transmission. A poster on the successful work was presented at Digestive Disease Week 2008 in Chicago in May.

The ability to stop the capsule's movement could be useful in studying the area just above where the esophagus connects to the stomach, Volke said. Perhaps as important, the capsule can have its orientation adjusted, meaning that doctors could swing the camera around to get a better look at a feature of interest.

It's unclear how long it will take to conduct clinical trials and to gain FDA approval of the modified device. When contacted, Given Imaging declined comment, citing the early stage of the project.

liveworksheets.com

Activity ①

Answer the following questions in Spanish.

1. What do *capsule endoscopes* do?

   .....

   .....

2. Why are patients happy with the results?

   .....

   .....

3. Who was responsible for the research project?

   .....

   .....

4. What problems does this new technology present?

   .....

   .....

5. What further improvements does the capsule need?

   .....

   .....

6. Why did Given Imaging decline to make any comments?

   .....

   .....

Activity ②

II. Give the value of the following words and expressions.

1. act like pills (line 1) .....
2. current FDA-approved (line 7) .....
3. on command (line 8) .....
4. designated by (line 16) .....
5. a pill-size enclosure (line 17) .....

Activity ③

Vocabulary: synonymous expressions

Go back to the text. Find words or expressions that mean the same as the following. Write the line number.

liveworksheets.com

N°	Word / Expression	Synonym in text	Line(s)
e.g.	*pill*	*capsule*	*Title, 1, 3*
1	taking (pictures)		
2	bowel		
3	illness		
4	gadget /appliance		
5	pivote / rotate		
6	result		
7	cooperation		
8	investigation		
9	moving through		
10	links to / is connected to		
11	perform (clinical trials)		
12	phase		

Activity ④

Choose the best option.

1 The function of ***because*** in line 5 is to introduce ...

a an additional idea b an opposite idea c a cause or reason

2 ***However*** in line 7 introduces ...

a an explanation b a contrasting idea c an example

Explain the idea introduced in Spanish:

.....

.....

3 In line 17 the word ..... is used to show *addition*.

liveworksheets.com

Activity ⑤

Indicate what the following words or phrases refer to in the text:

1. In line 2 the word ***they*** is used to refer to

   .....

2. The phrase ***such devices*** in line 4 refers back to

   .....

3. In line 10 the phrase ***The group*** has been used to refer to

   .....

4. Pronoun ***he*** in line 15 refers to

   .....

5. The word ***which*** in line 18 refers back to

   .....

liveworksheets.com