Session 2006

BREVET DE TECHNICIEN SUPÉRIEUR

OPTICIEN – LUNETIER

GÉNIE OPTIQUE

Groupe 10

ÉPREUVE DE LANGUE VIVANTE ÉTRANGÈRE : U 2

ANGLAIS

Durée : 2 heures	Coefficient : 1

L'utilisation du dictionnaire bilingue est autorisée.

L'usage de la calculatrice est interdit.

Dès que le sujet vous est remis, assurez-vous qu'il soit complet.

Le sujet comporte 2 pages, numérotées de 1/2 à 2/2

I SPY A BIONIC EYE

Ronnie Tainge was forced to retire as an Air Force physician in 1997 because he was legally blind with retinitis pigmentosa. Five years later, a silicon chip was implanted in his right eye, and within days he was able to see the hands on his bedroom clock [...] Over the next few months, his vision improved "drastically". He could even see the colors of TV newscasters'ties.

In 2002 Rainge, now 58, was one of 10 patients to receive a retinal chip developed by physician Alan Chow and his brother Vincent. This past spring another 20 patients got the silicon device. "When this chip is put into the eye under the retina, its solar cells and the electrodes come into contact with the poorly functioning light-sensing cells", says Alan Chow. Light stimulates some of the 5,000 microscopic solar cells on the chip to produce a tiny electric current that wakes up the eye's failing photoreceptor cells.

The chip holds promise for up to 1.2 million patients worldwide whose visual fields slowly shrink until they snuff out entirely. "Any improvement in people with retinitis pigmentosa is big because it's an inexorable disease where you gradually go blind", says Julia Haller, a professor of ophthalmology at John Hopkins University who has worked with the implant. "So anything that changes that downhill trajectory in any way is very big."

But the chip works in ways that are hard to explain. As in the case of Rainge, it can improve vision throughout the eye rather than solely in the two millimetres, covered by the tiny chip. Further, it sometimes helps the *other* eye, the one without the implant. And last, color vision can get better, even though the chip can't detect color at all. One explanation is that it may stimulate production of neurothophins, chemicals that encourage neural growth, Alan Chow says. "It's almost like an engine that turned off and we've jump-started it.

These anomalies might also be the result of the eye repairing itself in response to the implant. "Then the worry, of course, would be that the reparative effect would wear off as the eye completely healed" says Haller. "Or would it stimulate some type of long-term healing process.

It's a very interesting thing".

(Adapted from Anne Casselman / DISCOVER, August 2005.)

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BTS OPTICIEN LUNETIER-GÉNIE OPTIQUE **Épreuve : Langue vivante étrangère : ANGLAIS**	**Durée : 2h00** **Coefficient : 1**

QUESTIONS

I - COMPREHENSION DU TEXTE (10 POINTS)

1) Résumer le document en français (110 mots + ou – 10%)
Indiquer le nombre de mots. 6 points.

2) Traduire de la ligne 28 « These anomalies » ... jusqu'à la ligne 31 « Long-term healing process ? » 4 points.

II - EXPRESSION ÉCRITE

Do you know other technological devices that help blind people to be autonomous in their everyday lives ? To what extent can we say that they enable them to live a normal life?

(180 mots + ou – 10% - Indiquer le nombre de mots)