

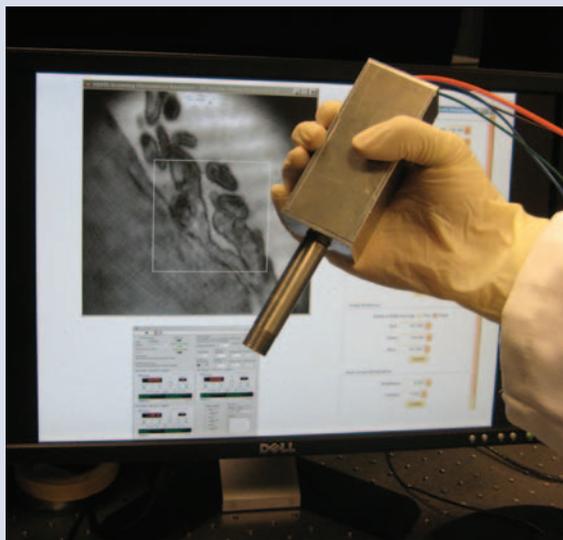
MICROSCOPE CREATED FOR EARLY ORAL CANCER DIAGNOSIS

A team of researchers from the University of Texas have created a portable miniature microscope designed to reduce the time taken to diagnose oral cancer.

The probe, which is around 20 cm long and 1 cm wide at its tip, could be used by doctors to diagnose oral cancer in real-time or as a surgical guidance tool; dentists could also use it to screen for early-stage cancer cells.

The probe was presented in an article in the *Journal of Micromechanics and Microengineering* in April¹ and has shown good agreement with images of oral cancers obtained using conventional, much slower techniques at the University of Texas Health Science Centre in San Antonio, Texas.

The probe uses a laser to illuminate areas of the sample and can view beneath the surface of tissue, creating full 3D images. It can also take a series of images and layer them on top of each other, much like the tiling of a mosaic, giving a large overall field-of-view.



Handheld confocal imaging probe (John X. J. Zhang – University of Texas at Austin)

The key component of the probe is a micromirror. Micromirrors have previously been used in barcode scanners and fibre optic switches and are controlled by a microelectromechanical system, allowing the laser beam to scan an area in a programmed fashion.

The low cost and ease of fabrication of micromirrors, along with their easy integration into electronic systems for versatile imaging operations, make them an indispensable component of the probe.

'There isn't a comprehensive programme in the US to opportunistically screen for [oral cancer];' said Dr John X. J. Zhang, lead author of the study. 'Without that, late stage discovery is more common.'

Traditional methods of diagnosing oral cancer, via visual inspection, biopsy and pathology reports are time consuming, costly, invasive and painful, often leaving scars.

The researchers envisage that, with a few adjustments, the device could be built for a quarter of the price it costs to build the microscopes that are currently used in diagnosis.

1. Wang Y, Raj M, McGuff H S *et al.* Portable oral cancer detection using a miniature confocal imaging probe with a large field of view. *J Micromech Microeng* 2012; **22**: doi: 10.1088/0960-1317/22/6/065001. Available at: <http://iopscience.iop.org/0960-1317/22/6/065001> (Accessed 31 May 2012).

UPDATE PUBLISHED ON CANCER GUIDANCE

NHS Evidence has published a new Evidence Update, *Improving outcomes in head and neck cancers*. The update focuses on a summary of selected new evidence relevant to the NICE cancer services guidance published in 2004.¹

NHS Evidence provides access to more than 300,000 reliable resources from 1,300 sources. Evidence Updates provide a regular, often annual, summary

of selected new evidence published since a literature search was last conducted for the accredited guidance they relate to. They reduce the need for individuals, managers and commissioners to search for new evidence, and inform guidance developers of new evidence in their field.

Evidence Updates highlight new evidence that might impact on the most recent, accredited guidance and also provide a commentary on the likely impact.

The new Evidence Update can be accessed at: www.evidence.nhs.uk/2656/improving-outcomes-in-head-and-neck-cancer-evidence-update-may-2012.pdf.

1. NICE. *Improving outcomes in head and neck cancers. NICE cancer services guidance*. 2004. Available at: www.nice.org.uk/guidance/CSGHN.

DIARY

100th FDI Annual World Dental Congress

Date: 29 August – 1 September 2012
Location: Hong Kong
www.fdicongress.org

17th World Congress on Dental Traumatology Science and Art: Overcoming the Limits of Knowledge

Date: 10–22 September 2012
Venue: Rio de Janeiro, Brazil
www.iadt-dentaltrauma.org
www.sbtbd.org.br

PER/IADR Congress

Date: 12–15 September 2012
Location: Helsinki, Finland
<http://iadr.com/i4a/pages/index.cfm?pageid=3955>

Optimising Outcomes in Restorative Dentistry

Date: 20 September 2012
Venue: Symposium Hall of the College, The Royal College of Surgeons of Edinburgh
Email: h.anderson@rcsed.ac.uk
Telephone: 0131 6689239
<https://ubis.rcsed.ac.uk/courses/coursedetails.aspx?diaryId=1027>

British Orthodontic Society Conference

Date: 23–25 September 2012
Location: Bournemouth
www.bos.org.uk

DDU–Eastman

Dento–Legal Conference
Date: 28 September 2012
Location: London
Email: edi-cpd@ucl.ac.uk
www.the-ddu.com

BDTA Dental Showcase

Date: 4–6 October 2012
Venue: ExCeL London
www.dentalshowcase.com

A day with Dr Pascal Magne: no post no crown restorative dentistry: a biomimetic approach

Date: 26 October 2012
Venue: Novotel St Pancras, London
Telephone: 020 7563 4590
www.bda.org/seminars

BSDHT Oral Health Conference

Date: 9–10 November 2012
Venue: ACC Liverpool
www.bsht.org.uk