NEW HORIZON IN CONTINUING MEDICAL EDUCATION: WEB-BASED SURGICAL TRAINING AND UPDATING

Marco Maria Lirici

7th Panhellenic Congress of Laparoendoscopic Surgery
Ioannina May 19 – 21, 2005

NEW HORIZON IN CONTINUING MEDICAL EDUCATION: WEB-BASED TRAINING AND UPDATING

Strictly speaking the Internet is an

INTERNATIONAL NETWORK OF COMPUTERS

In reality the Net is much more:

IT IS ABOUT… SHARING KNOWLEDGE

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Services and applications are increasingly used in the HEALTH SYSTEM

1st line basic services:
e-mail, mailing list, usenet, chat-line

2nd line basic services:
search engines, on-line consultation, access to medical data-bases, on-line medical journal

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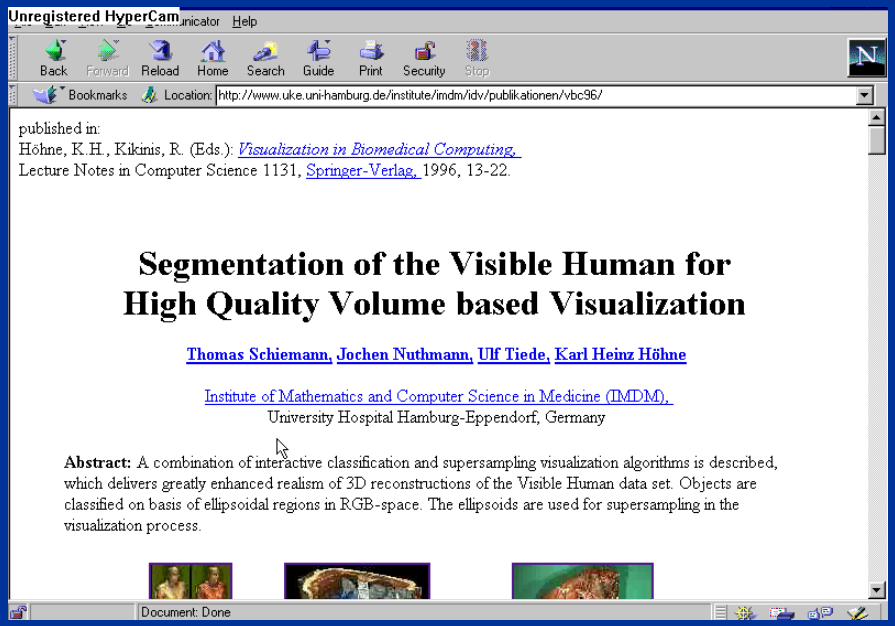
ACCESS TO MEDICAL DATABASES ON-LINE CONSULTATION



LEARNING ANATOMY, PLANNING PROCEDURE

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THE…HIDDEN SIDE

- QUANTITY OF MEDICAL DATA/INFORMATION
- QUALITY OF MEDICAL INFORMATION
- QUALITY CONTROL
- SAFETY AND SECURITY OF ON LINE DATA
- TIME WASTING

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THE NET IS CERTAINLY AN UNRIVALLED MEDICAL LIBRARY. THIS MAKES THE WWW AN EXTRAORDINARY TOOL, WITH THE HIGHEST POTENTIAL FOR MEDICAL EDUCATION.

BUT…

QUANTITATIVE AND QUALITATIVE PROBLEMS ARISE FROM THE AMOUNT OF INFORMATION EXISTING ON THE NET

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SEARCH ENGINES CAN SCAN BILLIONS OF WEB PAGES IN A MATTER OF SECONDS: THEY DETECT THE PRESENCE OF A SEARCH TERM ON A WEB PAGE AND CANNOT JUDGE THE ACTUAL RELEVANCE OF A SITE

HEALTH PROFESSIONALS NEED:

- MEDICAL RESOURCES DIRECTORIES
- MEDICINE ORIENTED BROWSERS OR SEARCH TOOLS

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EXAMPLES

MEDLINE

MEDSCAPE

COCHRANE LIBRARY

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QUALITY ASSURANCE...

of medical information is a prerequisite for spreading on-line CME. For the time being only the 5% of all credits ar earned on-line in the USA

Gandsas and McIntire, Min Invas Tech & Allied Technol 2002: 11(2)

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QUALITY ASSURANCE

VANCOUVER GROUP guidelines for the scientific contents of medical sites

IT MUST BE DISCLOSED:

authorship, copyright, date of creation of document, name of the editor and organisation, references and sources, owner of the website, possible sponsor

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QUALITY ASSURANCE

HEALTH ON THE NET FOUNDATION autoregulation priciples to be met to get labelled with the **HONCODE** logo:

- Authority
- Complementarity
- Confidentiality
- Attribution
- Justifiability
- Transparency of authorship
- Transparency of sponsorship
- Honesty in advertising & editorial policy

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QUALITY ASSURANCE

HEALTHWEB is a collaborative project of the health sciences libraries of the Greater Midwest Region, the National Network of Library of Medicine and the Committee for Institutional Cooperation with the support of the National Library of Medicine that has **FOUR FUNCTIONS:**

Identifying relevant resources
Evaluating resources
Providing access to resources
Making new resources available on the Internet

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QUALITY ASSURANCE

OMNI – Organising Medical Networked Information is a **gateway** to evaluated, qualified Internet resources in health and medicine

It is a FILTER-BASED SERVICE that presents a catalogue of resources selected according to the **BIOME** evaluation guidelines established by the BIOME Special Advisory Group for Evaluation (SAGE)

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OTHER PROBLEMS ARISING

CONNECTION TIME

SAFETY, SECURITY

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PROBLEMS SOLVING

BROADBAND INTERNET

Secure Socket Layers
SSL data encryption

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THE FUTURE 1

VIRTUAL UNIVERSITIES

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VIRTUAL UNIVERSITY
a new concept of real time university

IT IS NO LONGER POSSIBLE TO HAVE A 30-YEAR CAREER BASED ON THE KNOWLEDGE TRANSFERRED AT THE UNIVERSITY, WHEN TECHNOLOGIES ARE CHANGING EVERY 5 TO 10 YEARS

Maissoneuve, Marescaux MITAT 11(2) 2002

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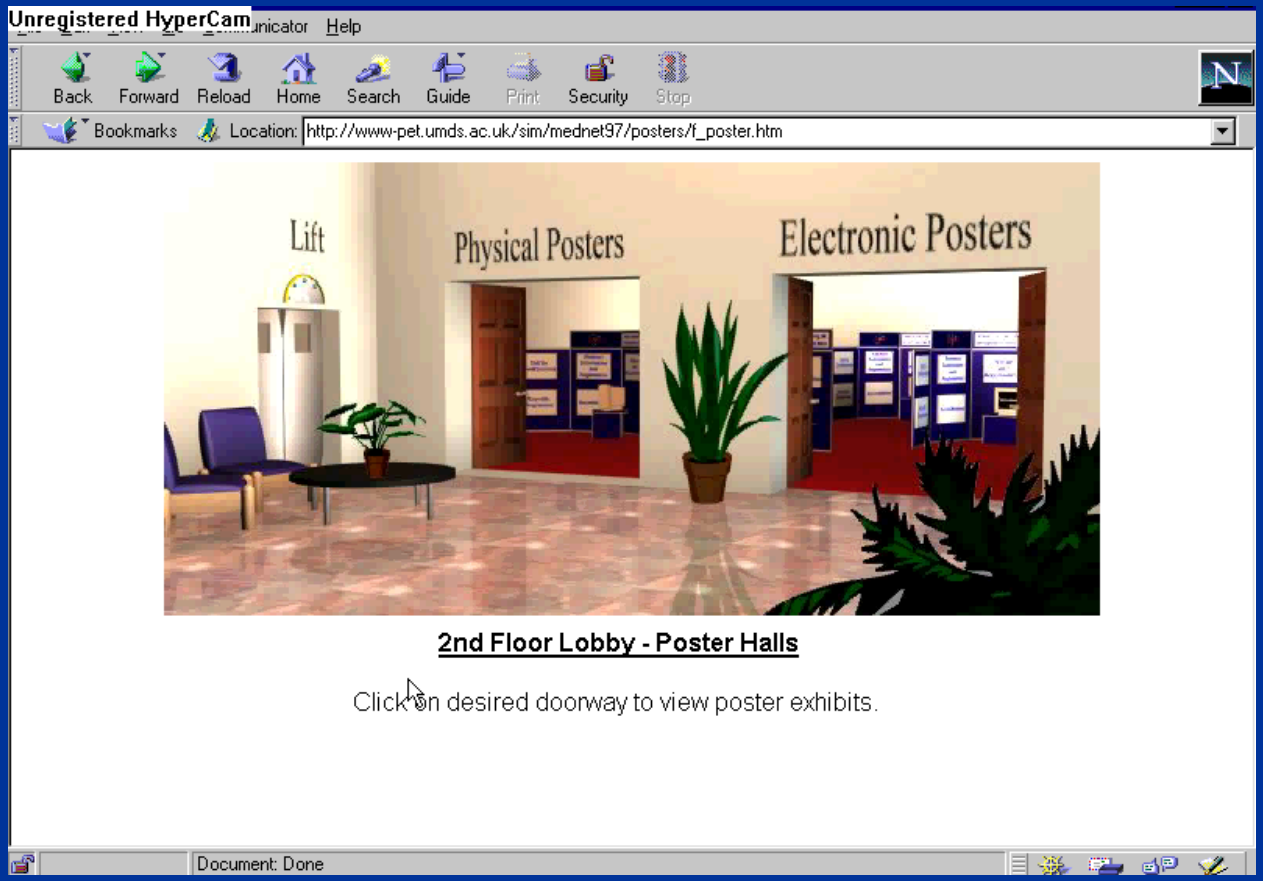
THE FUTURE 2

VIRTUAL CONGRESSES

NEW HORIZON IN CONTINUING MEDICAL EDUCATION: WEB-BASED TRAINING AND UPDATING

VIRTUAL CONGRESSES

9TH INTERNET WORLD CONGRESS FOR BIOMEDICAL SCIENCES INABIS 2004



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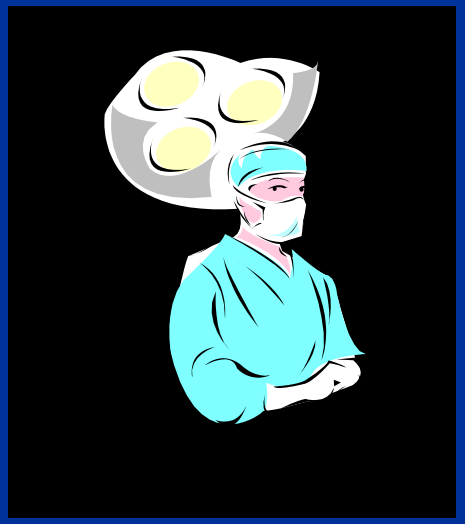
THE FUTURE 3



VIRTUAL TRAINING

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TEACHING AND LEARNING SURGERY

MODERN SURGERY HAS SHIFTED FROM DIRECT HANDS-ON MANOEUVRES TO INDIRECT MINIMAL ACCESS PROCEDURES INVOLVING INTERNAL CAMERAS AND RESULTING IN A HAND-EYE DISCONNECTION

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VIRTUAL REALITY SURGICAL SIMULATOR. THE FIRST STEP

RM Satava

Surg Endosc 1993 7(3): 203-205

The virtual-reality surgical simulator signals the beginning of computer simulation for surgery. The surgical resident of the future will learn new perspectives on surgical anatomy and repeatedly practice surgical procedures until they are perfect before performing surgery on patients.

It is anticipated that the full development of the surgical simulator will take less than the 40 years which was required for flight simulator to become an indispensable ingredient of pilot training

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VIRTUAL REALITY TRAINING

VIRTUAL REALITY TRAINING IMPROVES OPERATING ROOM PERFORMANCE: RESULTS OF A RANDOMISED, DOUBLE-BLINDED STUDY

Seymour, Gallagher, O´Brien, Bansal, Anders, Satava
Ann Surg. 2002, Oct; 236 (4)458-63; discussion 463-4

Surgeons who trained on MIST were
- **29% faster**
- **made 6 times fewer errors**
- **were 5 times less likely to injure non-target tissue**

when performing a lap. cholecystectomy

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THE NEXT STEP

DO YOUR OWN ONLINE SURGICAL SIMULATION

WEB-BASED SURGICAL TRAINER

THE SIMULATOR IS RUN THANKS TO AN IMPLEMENTED VIRTUAL REALITY MODELLING LANGUAGE (VRML)

WebSET Web-BASED STANDARD EDUCATIONAL TOOL, PROJECT FUNDED BY THE EUROPEAN COMMISSION WITHIN THE 5TH FRAMEWORK PROGRAMME. INNOVATIVE USE OF INTERACTIVE Web TECHNOLOGIES

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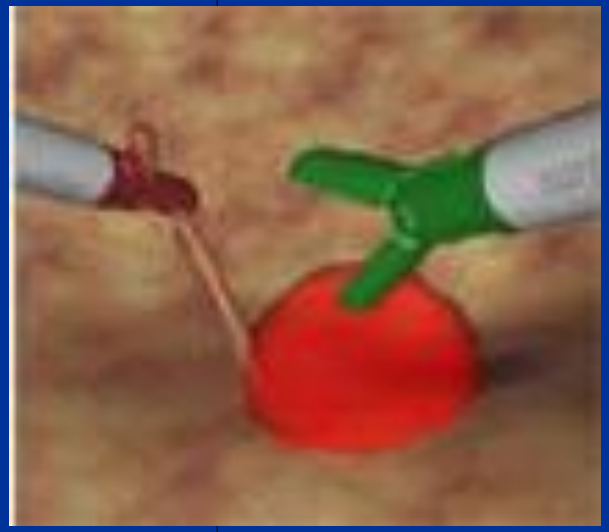
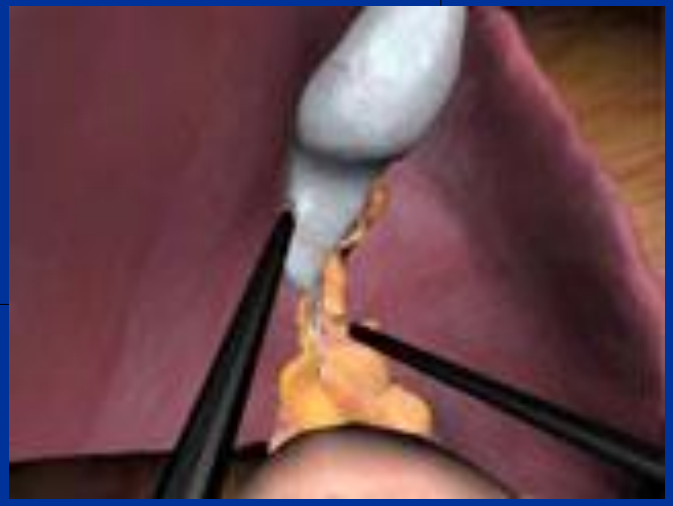


webSET
web-based Standard Educational Tool

WEB BASED SURGICAL TRAINER



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THE FUTURE 4

WEBCONFERENCES

TELECONSULTING

ON-LINE CONSULTING AND ACCESS TO MEDICAL AND SURGICAL GUIDELINES AND EXPERT PANELS

Use of the World Wide Web to implement clinical practice guidelines

Example : How to use the site www.epage.ch
(European Panel on the Appropiateness of Gastrointestinal Endoscopy)

Summary

- Description of the clinical situation
- Connection to the Web site
- Choose the procedure
- Choose the chapter
- Advance into the chapter
- About bibliography research

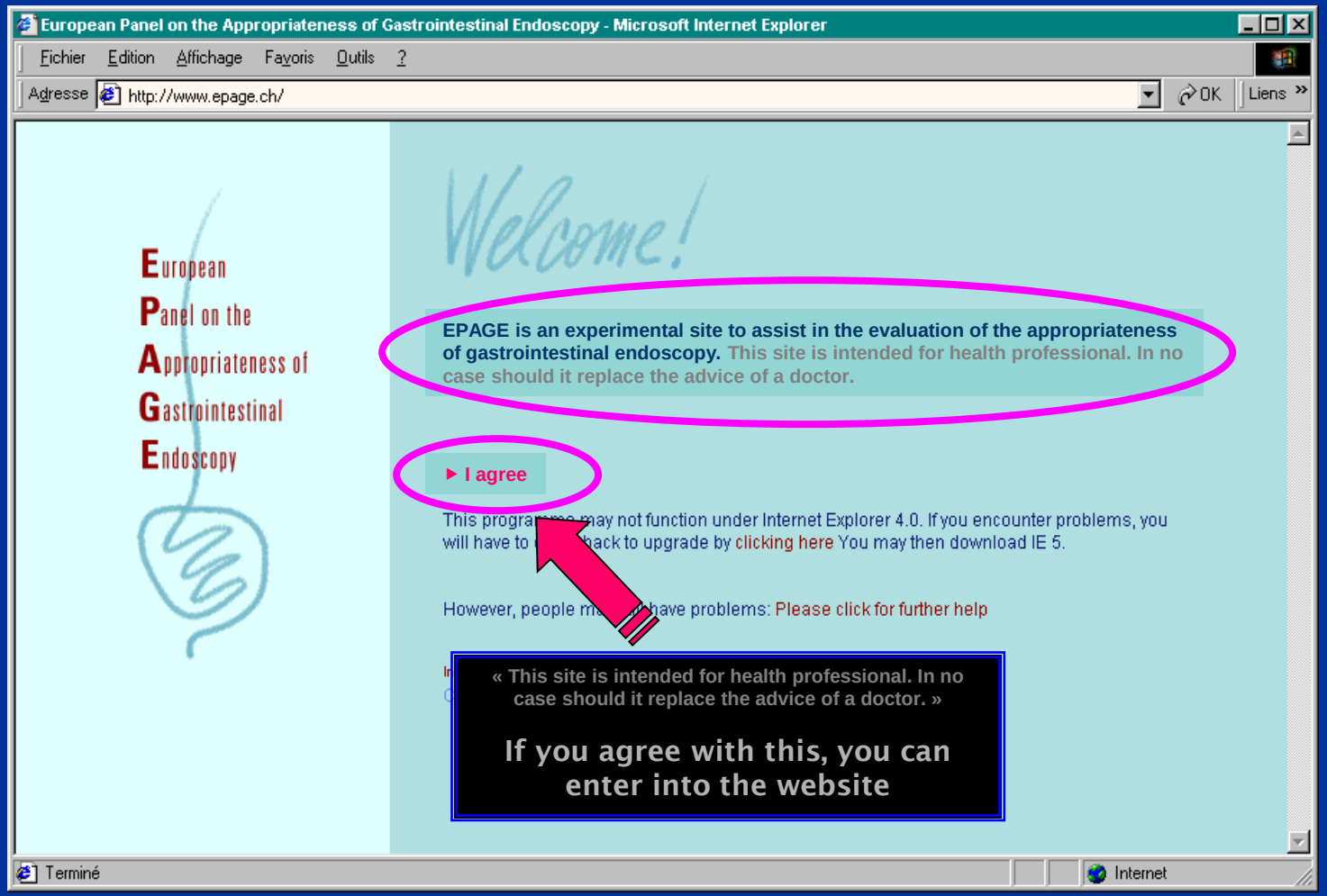
A clinic situation …

- Your patient has a known Barrett's esophagus
- He is asymptomatic, but had no gastroscopy for 3 years
- The last exam does not show any intestinal metaplasy

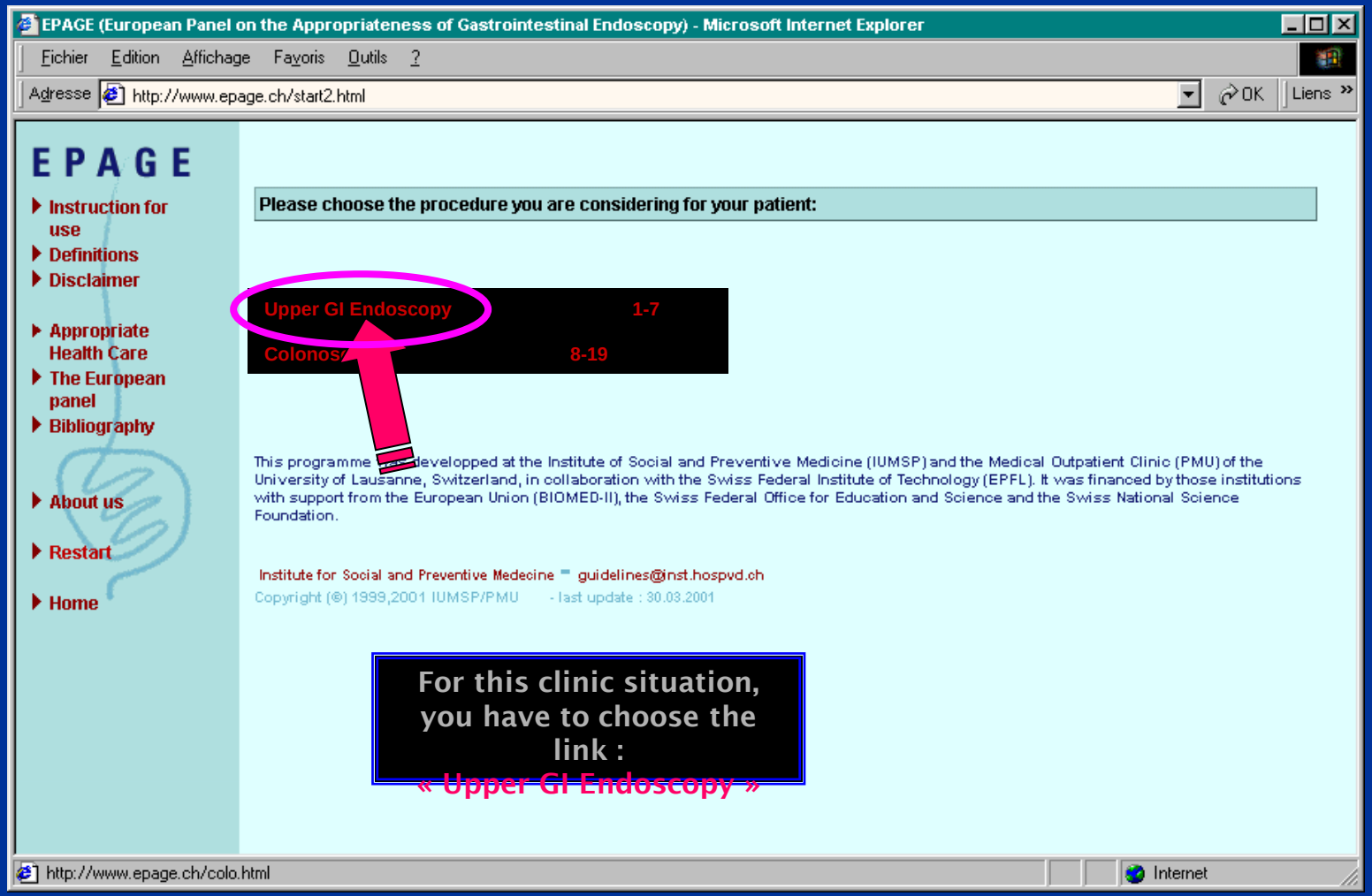
Question ?

➔ Is there an indication for a new gastroscopy?

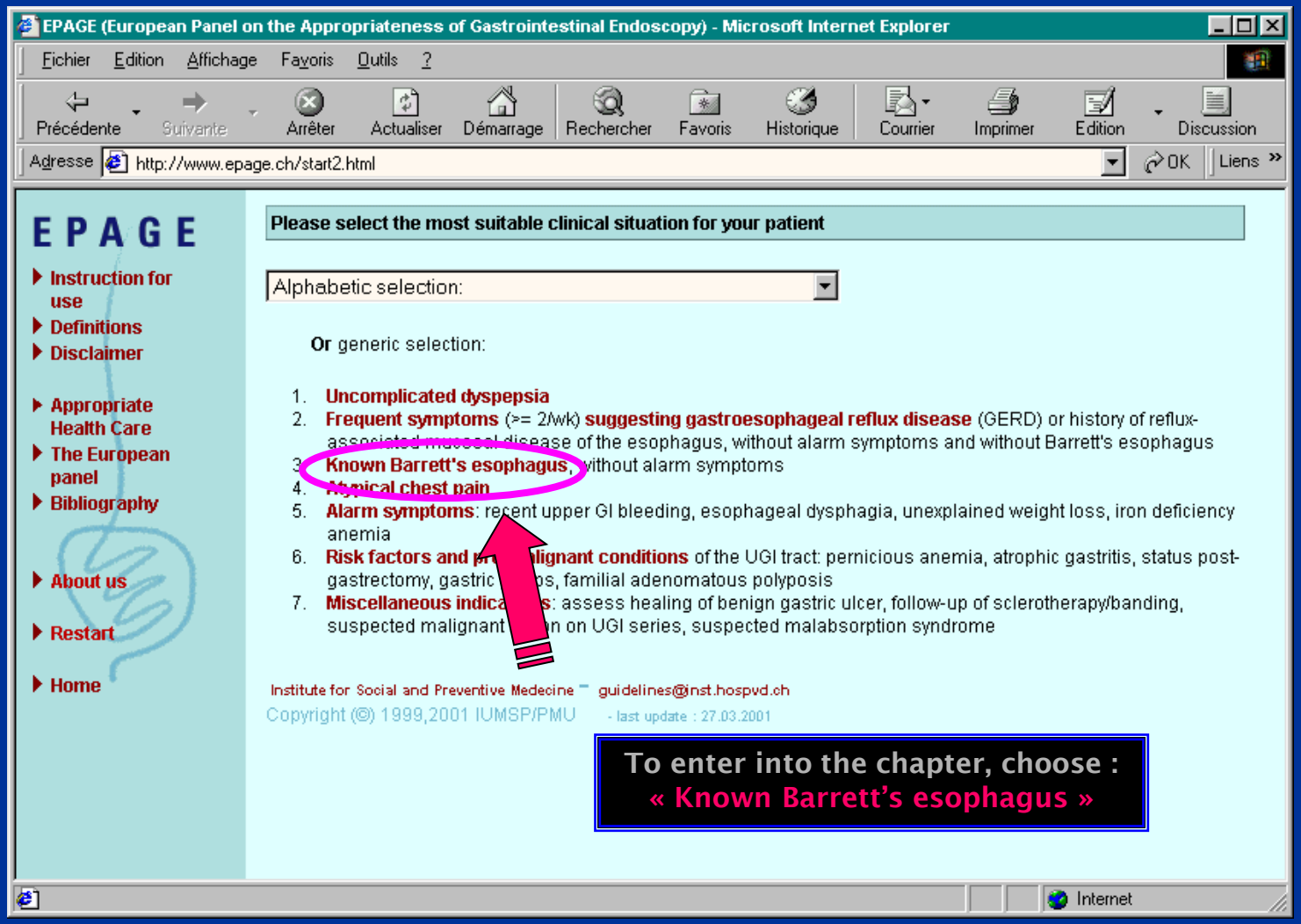
.....Connection to the Web site



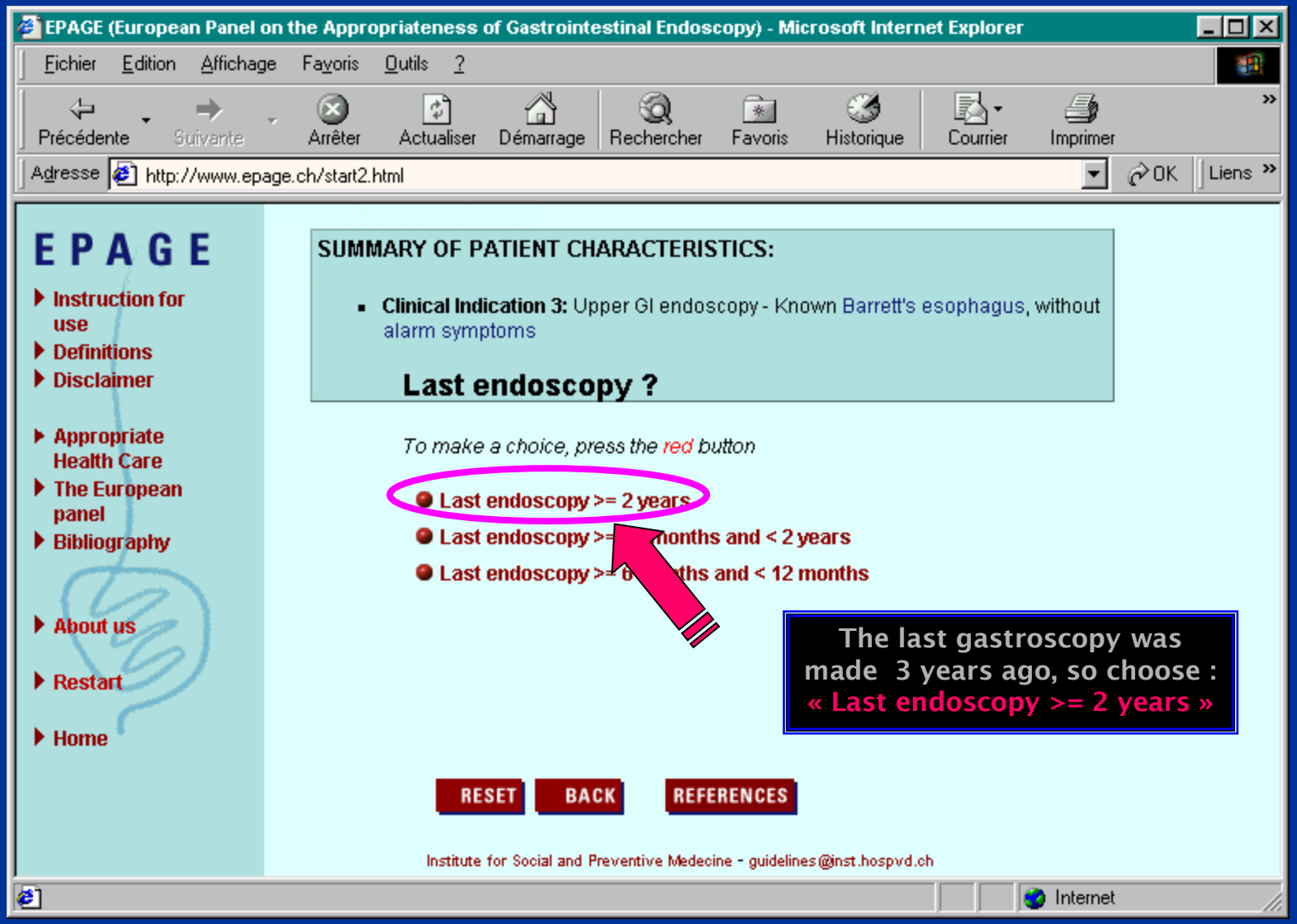
Choose the procedure …



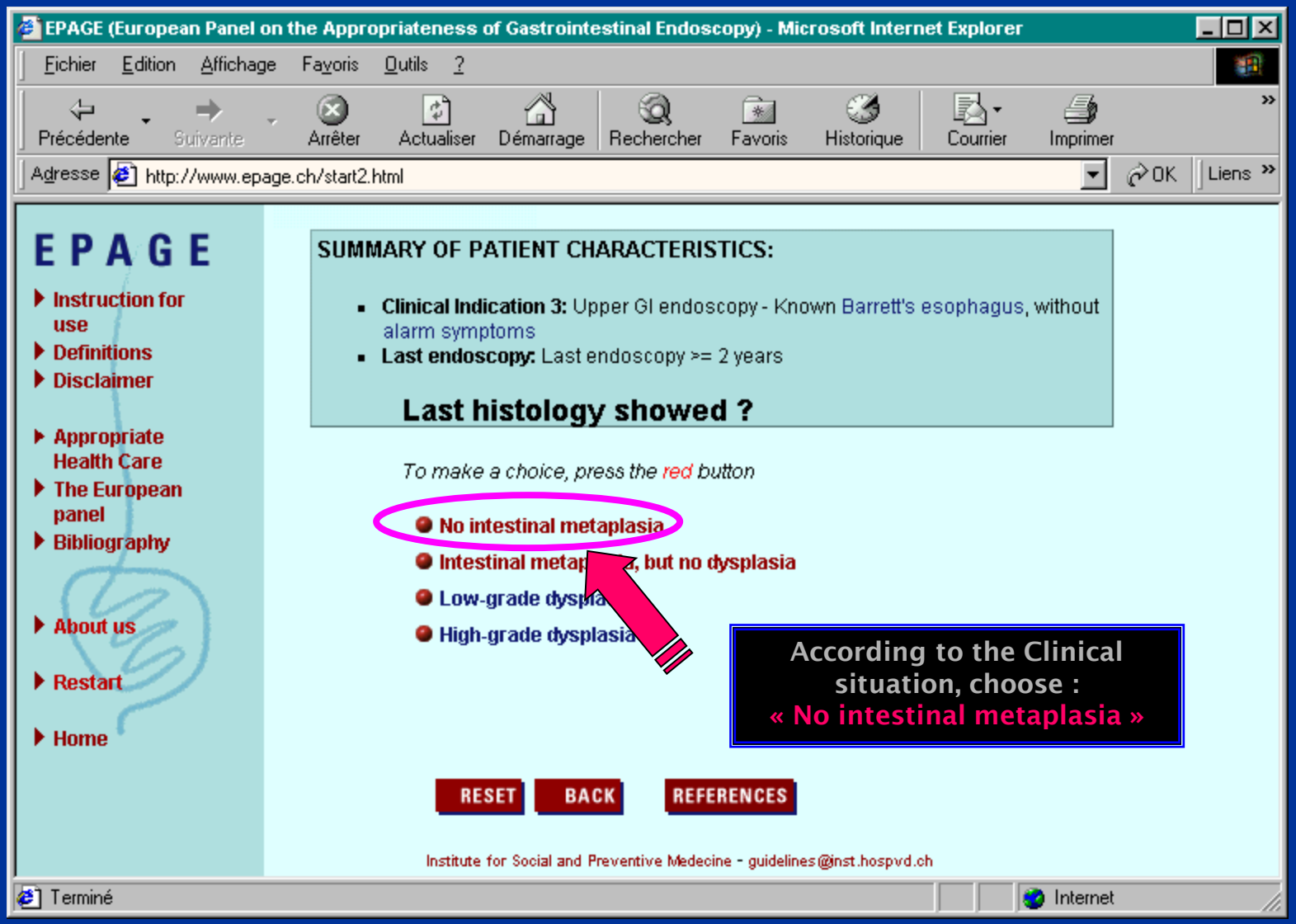
Choose the chapter …



Advance into the chapter …

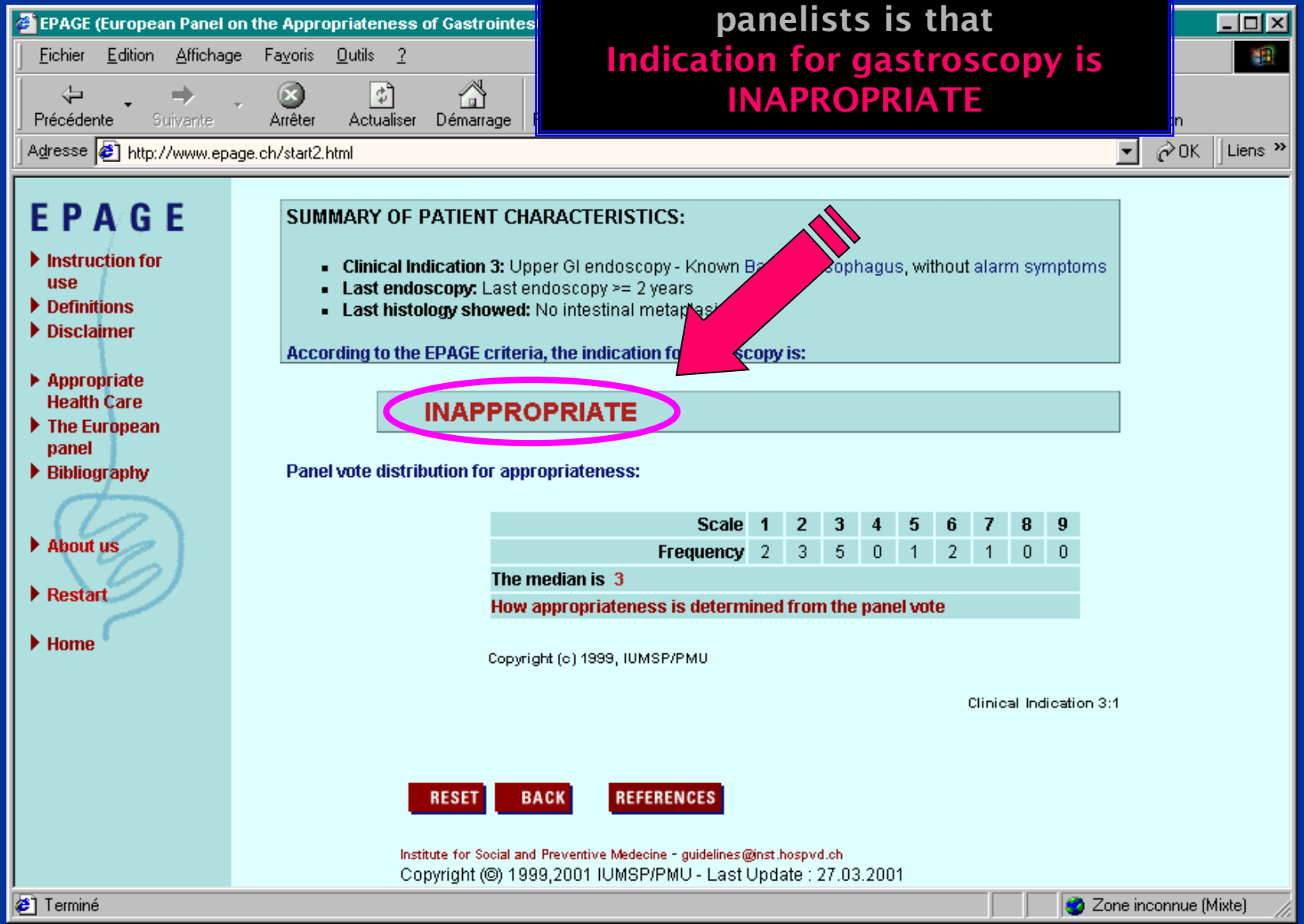


.....following into the chapter..



Results

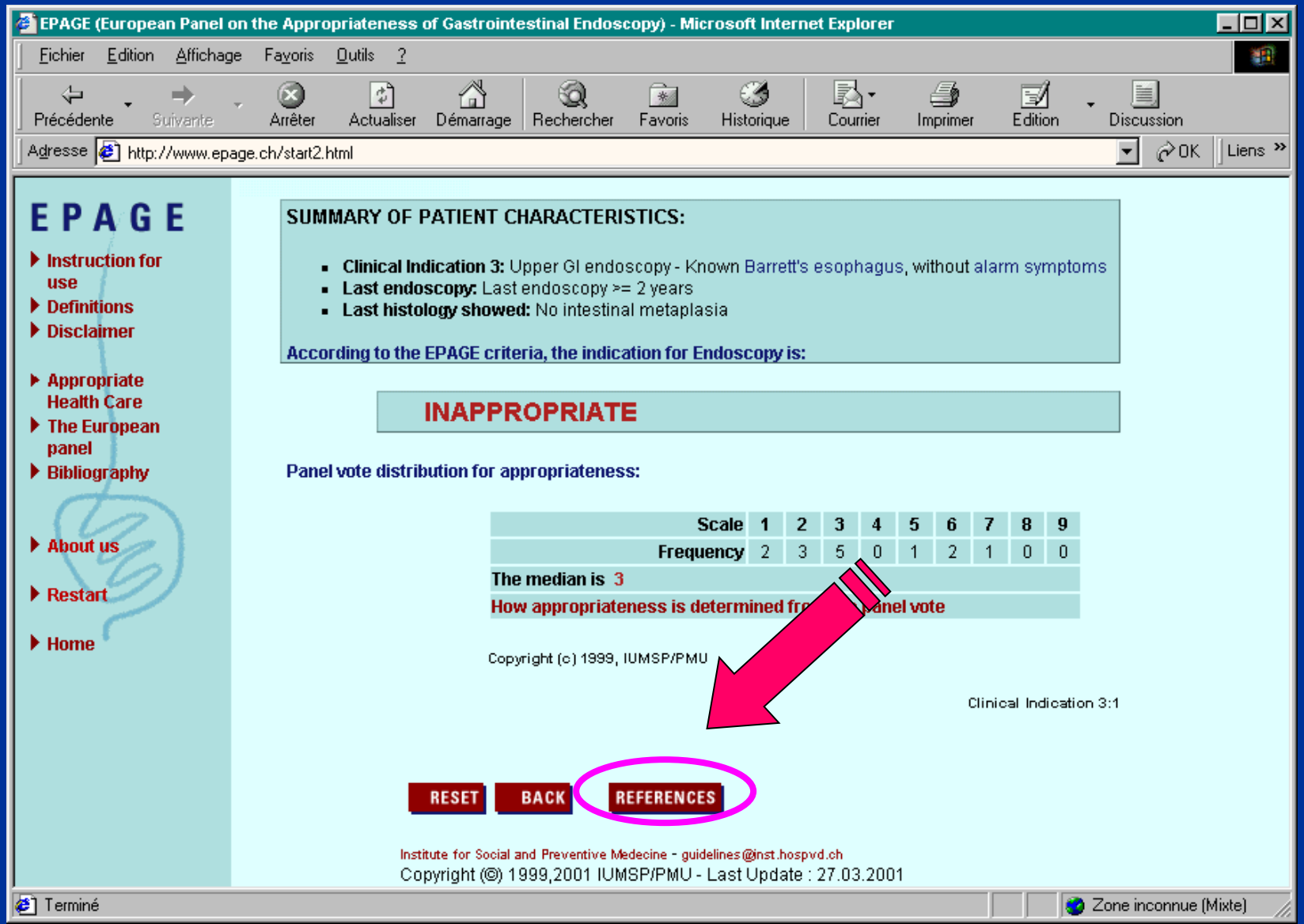
The results giving by the panelists is that
Indication for gastroscopy is INAPROPRIATE



About bibliographic research

- By clicking on the "references" button, the reader can access a review article on the subject of upper GI endoscopy in Barrett's oesophagus, as well as MEDLINE abstracts of related articles.

References button



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CONCLUSION 1

WHAT THE FUTURE HOLDS

Mastering the Internet is becoming a prerequisite for all those need to be updated in the medical field. Broadband Internet will depict a scenario where virtual meetings, virtual training, teleconsulting, ready access to medical data bases will enhance the quality of both medical education and medical practice.
Furthermore: all this makes the most advanced information to any professional in the health system available throughout the world, from the richest and most industrialized countries to the third world.

NEW HORIZON IN CONTINUING MEDICAL EDUCATION: WEB-BASED TRAINING AND UPDATING

CONCLUSION 2

TEACHING AND LEARNING SURGERY

TIME-HONOURED TRADITION BASED UPON THE

SEE ONE, DO ONE, TEACH ONE

APPRENTICESHIP MODEL

WHAT FOR THE THIRD MILLENNIUM?

NEW HORIZON IN CONTINUING MEDICAL EDUCATION: WEB-BASED TRAINING AND UPDATING

CONCLUSION 2

THE FUTURE OF MEDICAL EDUCATION IS NO LONGER BLOOD AND GUTS, IT IS BITS AND BYTES
Gorman PJ, Meier AH, Rawn C, Krummel TM

At the Center for Advanced Technology in Surgery at Stanford we envision the future: within the next 10 years we will select, train, credential, remediate, and recredential physicians and surgeons using simulation, virtual reality, and Web-based electroning learning