

# NIVDP digital slide collection for European education in dermatopathology



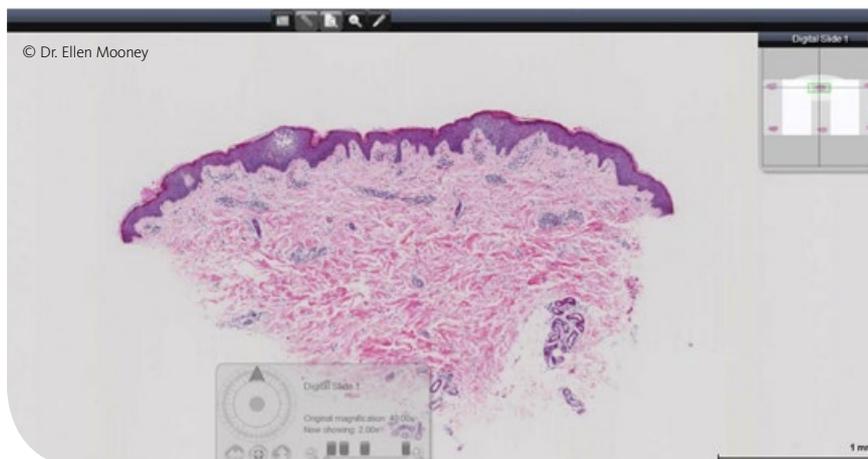
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**D**igital microscopy or whole slide imaging (WSI) is the software manipulation of high-resolution digital images of tissue sections, which simulates examining glass slides under a microscope. Magnifications of up to 40x can be achieved. WSI for routine surgical pathological diagnosis was recently approved by the US Food and Drug Administration (FDA) and regulatory agencies elsewhere will soon follow suit. Widespread use of digital microscopy,

ranging from diagnosis and consultation, to board certification and continuing medical education (CME) is rapidly increasing. Consultation with digital slides is already in use in Europe. By 2020 the American Board of Dermatology Examination will contain digital slides and this will spread to other countries. CME credits for digital pathology, both in live courses and online programmes have been available in the US, Europe and Australia for several years.

An example of a digital dermatopathological slide.

This can be seen in this link with the use of Adobe FlashPlayer and a desktop or laptop computer. <https://vdpmaterial.nivdp.com/dsb/webViewer.php?snapshotId=1509959945>  
Use the cursor to move the slide and double click on the image to increase magnification. Alternatively, the control at the bottom of the panel can be used. Supported browsers are Internet Explorer 8 or Google Chrome on Windows, Mozilla Firefox 4 and Safari 5 on Mac.



The European Union of Medical Specialists (UEMS) has recently endorsed "Training Requirements for the Specialty of Dermatology and Venereology. *European Standards of Postgraduate Medical Specialist Training*". A number of skills in dermatopathology are listed within the training requirements, which were prepared for the European Commissioner for Education (and Culture) who is responsible for the preparation of all documents pertaining to the recognition of professions in the EU/EEA. Thereafter, it is a matter for the European Parliament. Currently, it is estimated that in five years, a supranational European Board Examination will take effect and additional exams, for example, for skills, will be performed at national level.

The objectives of this project, which was led by the Nordic Institute of Virtual Dermatopathology (NIVDP), were threefold:

1. To create a European collection of digital dermatopathology slides to make teaching material accessible where resources and slide collections are limited. The collection would help to ensure uniformity and common standards of dermatopathological training. An added benefit of improved training is improved standards of dermatological care.
2. Dermatology residents would simultaneously get training in the use of digital dermatopathology and related software and be able to utilise

it in self-study and clinico-pathologic correlation. This experience can be used for in-training examination, board examinations, consultations, and in CME programmes.

3. The creation of this collection and continuous feedback from institutions using it would increase pan-European collaboration between dermatologists, both those working with WSI, as well as those in need of the teaching material.

The Digital Slide Collection, which was created during this project, consists of over 450 digital dermatopathological slides and about 200 clinical photographs and clinical information for the cases where clinical photographs are available. The main contributors were the NIVDP members, particularly Prof Antoinette F Hood and Werner Kempf, as well as Prof Rajendra Singh. The collection is meant to contain certain "core" diagnoses for teaching dermatology residents. It is not meant to function as a textbook, but rather to be used as *ancillary teaching material* in a formal teaching setting, or for self-study demonstration of textbook material, previous PowerPoint lectures or handouts.

Collaborative departments were located in Victor Babes University of Medicine and Pharmacy in Romania; Sir Paul Boffa Hospital, Floriana, Malta; and Semmelweis University in Budapest. They participated in reviews of the collection from the outset. Subsequently, access was given to the departments of dermatology

in the universities of Tampere, Finland and Gothenburg, Sweden.

There were three reviews of the collection by the collaborating institutions. Subsequent to the first two, numerous digital slides, immunofluorescence photomicrographs, clinical slides and information were added and considerable editing was done. The final review involved institutional use of the collection, both by residents and instructors. Subsequently, suggestions for further use were conveyed.

Distant consultation with the use of WSI will lead to the establishment of regional and international networks of dermatopathology, referral centres and/or centres for tertiary care. In order to have international referral centres for consultation purposes, more equivalency of training requirements and acceptance of board exams across borders will ensue.

This will lead to international certification committees and standardisation of certification exams worldwide. Increased demand for board certification review courses, self-assessment exams at congresses, and CME exams (for example, in preparation for re-certification) which contain WSI, will follow. This collection will prove very useful in preparation for all of these. ●

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