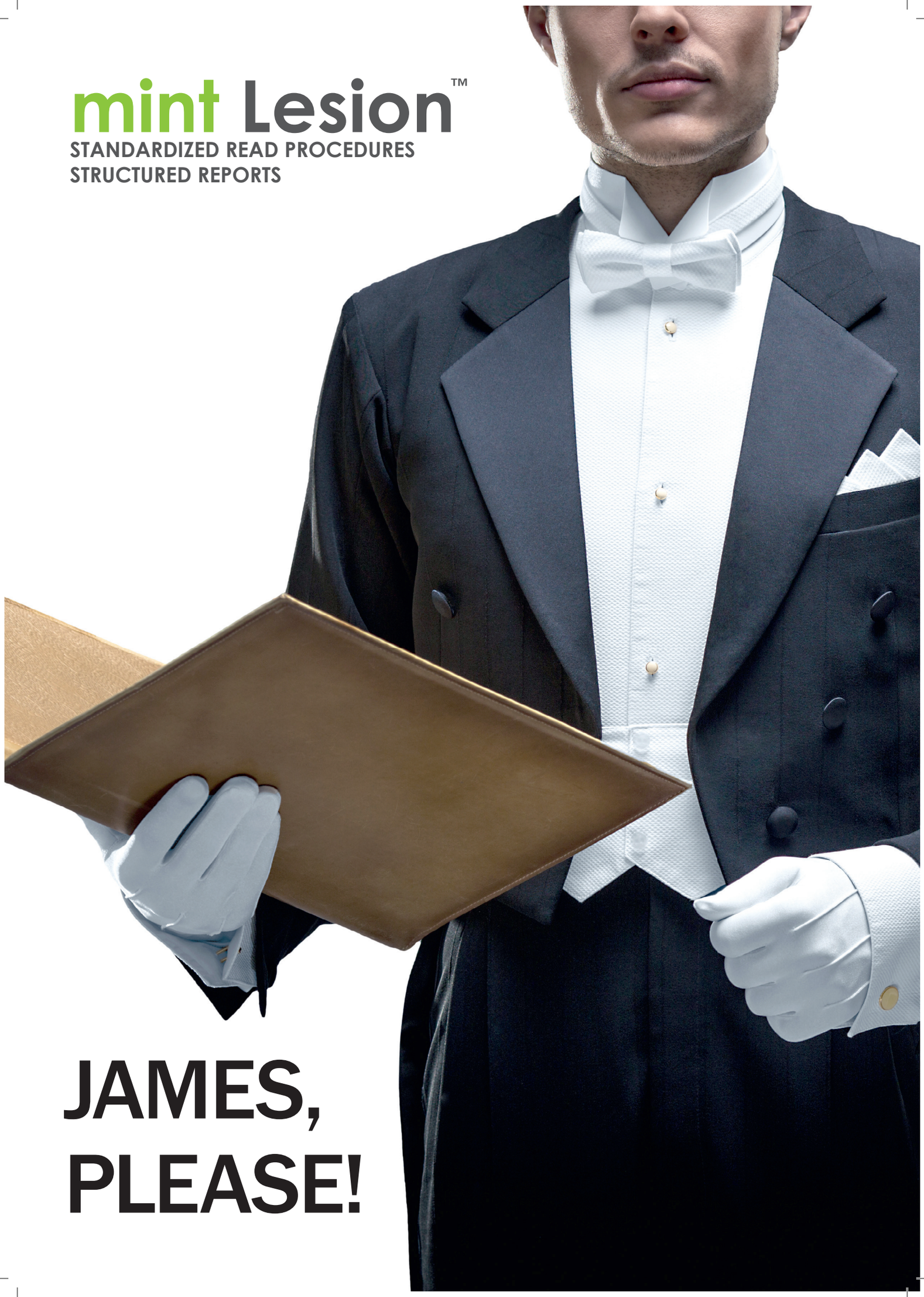
mint Lesion™

STANDARDIZED READ PROCEDURES
STRUCTURED REPORTS



JAMES, PLEASE!

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An intelligent, context orientated assistant-system which guides you through patient appraisals and provides you with all relevant patient and disease related information. The result: radiologists are in the center of the treatment process and deliver complete, standardized and structured reports.

Doctor Martin R. Smith*, radiologist at a Cancer Center, is frustrated. He is currently conducting a patient's follow-up assessment. However, he is unable to retrieve all the relevant images and cannot completely recall the patient's history and prior treatments. A colleague had previously conducted the baseline read and now Dr. Smith must go through all the old reports before he can begin the appraisal.

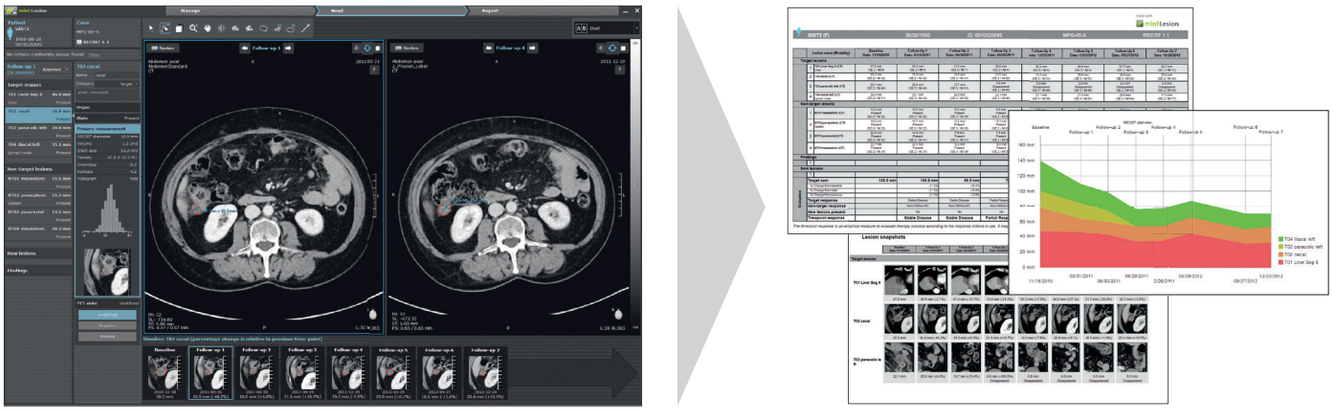
Situations like this are not unusual. They highlight how much unnecessary time radiologists invest in preparing, clarifying, referring, organizing, and enquiring about cases. As a result, the quality of the appraisal and the radiologist's efficiency suffers.

The development of a technological assistant to support radiologists would help resolve these problems. The assistant would know the patient history and be able to clearly present this to the radiologist. The assistant knows which images of the past are relevant for the current read and automatically synchronizes those images. The assistant is familiar with different clinical guidelines, and can warn radiologists of possible conformity issues. It also knows the requirements of the various disciplines and among other things it can guide radiologists through the read. The radiologist, however, maintains full control and can decide whether or not to follow the assistants' recommendations.

Such an assistant-system for oncological reads has been developed by Mint Medical. The software mint Lesion operates within the scope of screening, staging, and therapy evaluation for oncological radiology. Two exemplary applications of mint Lesion are described here.

The example from Dr. Smith already describes one such case – either in a routine setting or in clinical trials. Lesions can be measured and observed over different time-points in order to assess the effectiveness of a therapy. In mint Lesion, reads are conducted in line with the exact requirements for a chosen context. Images are then automatically added to an on-going patient report. The measurements and categorizations (e.g. targets and non-targets for RECIST 1.1) from the baseline-reports are documented and saved. This means that for every follow-up assessment, the images are automatically synchronized. The radiologist is then guided to the appropriate series and slice from the new images, in which the baseline observation has been marked. Additionally, the software supports the incorporation of rules from the chosen criteria, for example RECIST 1.1. The system then interprets and compiles the results, presenting them in a structured report.

** Fictional character*



Use case 1: Therapy evaluation with mint Lesion (e. g. in line with RECIST)

For lung tumor staging with the TNM classification, other specific requirements exist. Here, the categorization of the observations is distinguished as primary tumor, lymph node and metastases.

In addition to measuring the lesion, additional interesting features – for example localization or extent of infiltration into other areas – can be recorded. mint Lesion does not bombard the user with too many detailed requests. Instead, with the assistance of a context-orientated checkboxes, mint Lesion guides the user through the read. In this manner, the user is reminded of the main questions that must be answered for clinical partners.

The system is dynamic. In a case where it is clear that a cancer is in an advanced state and chemotherapy is the next step, other information is required in comparison to the case where a small primary tumor without metastases is detected. The result is an automatically derived (but individually correctable) TNM classification that is documented as a comprehensible and structured report.

In mint Lesion, the user interface is identical for all applications and intuitively operable. It distinguishes itself through context specific design, for example, the categories and different possibilities for assigning attributes to a lesion, as well as the default hangings for image presentation.

The use of the assistant-system transcends radiology.

The additional benefits of such a system to support radiologists in their daily work is clear, so too are the benefits for interdisciplinary cooperation. Oncologist and surgeons are provided with standardized, valid and consistent reports, on which they can bases their decisions and actions. Radiologists will therefore be more central to the treatment process, particularly through the integration of additional relevant clinical data, which can be included from other systems. This allows radiologists to circulate more holistic, patient specific information to interdisciplinary groups, such as tumor boards, where it is of great importance. ■

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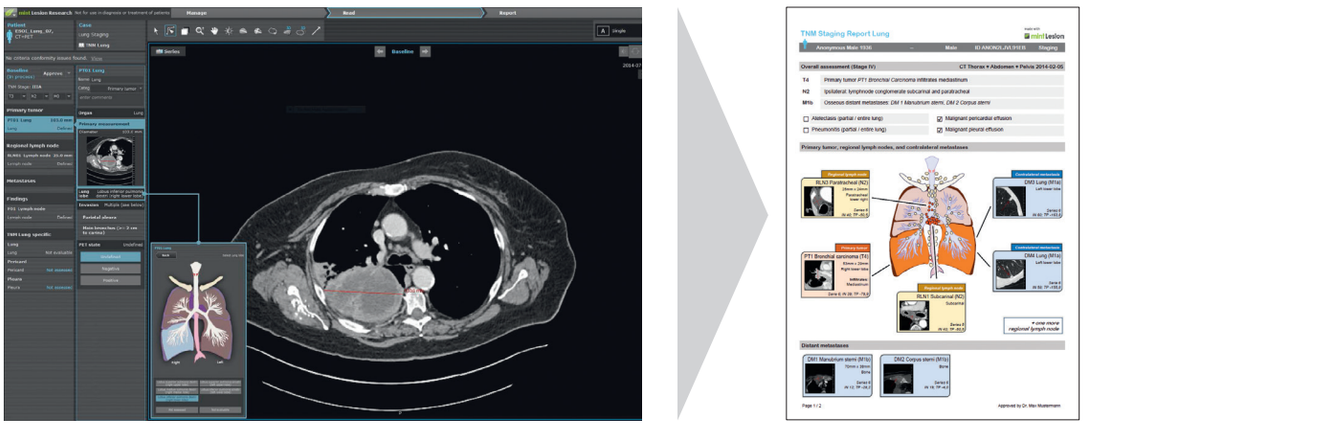

Use case 2: Lung staging with mint Lesion (with automated TNM classification)

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