



**Diagnostic Committee**  
**Report 2014/15**

The Diagnostic Committee is chaired by Tarek Yousry and its members are Marion Smits, Núria Bargalló and Meike Vernooij. The subcommittee had its inaugural meeting in December 2014. It defined its aims, established its structure and developed a work plan for its tenure. This proposal (see appendix 1) was approved by the ESNR Executive committee in Vienna, at the ECR in March 2015. Since its inauguration the Subcommittee met twice in London (17.2. and 10.7.2015) In the following we present a brief summary of Subcommittee's working group (WG) activities.

***Tumour WG (Marion Smits, Appendix 2)***

- Theme: The Working Group's theme is state-of-the-art glioma imaging in clinical practice and research trials, focusing on a) standardisation of conventional MR imaging, and b) the role of advanced imaging techniques with MR imaging and PET.
- WG has been established with members from different specialties and representatives from different professional organisations (EORTC, ESMRMB, ESNR, SENR, RANO PET, SNO, BNOS), now consisting of 9 members (see appendix for composition)
- WG plans its first in-person meeting at ESNR 2015, and has thus far communicated digitally
- WG organises a 1 hour interactive workshop at ESNR 2015 focusing on state of the art imaging in brain tumours in clinical practice.
- WG plans a position paper on state of the art imaging in brain tumours in clinical practice, to be endorsed by the EORTC and ESNR

***Epilepsy WG (Núria Bargalló, Appendix 3)***

- Theme: The WG's theme is to standardize the fMRI protocol for language lateralization in adults and paediatric patients with refractory epilepsy in clinical practice.
- WG has been established with members from different specialties, now consisting of 7 members (see appendix for composition)
- WG has had its first TC on July 1<sup>st</sup>, 2015
- WG is planning to make an inventory of language fMRI protocols to assess similarities and discrepancies as a basis for position paper
- WG plans to organise a workshop at ESNR 2016 focusing on state of the art fMRI language lateralisation protocols for epilepsy.



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### ***Examination WG (Meike Vernooij)***

- WG provides the EBR Case Collection Committee with neuroradiological exam materials. All the 2015 material has been submitted in a timely fashion
- For the 2016 batches, the WG plans to establish a network of centres that will engage in collecting appropriate material.  
Current suggestions are: Rotterdam; London, Madrid and Barcelona.  
The network will be chaired by MV, who will
  - ensure that the quality standards are maintained and that the content is balanced.
  - provide guidelines to the participating centres
  - ensure that the deadlines will be met
- WG will communicate with the EBR Case Collection Committee to obtain feedback on the submitted material and discuss opportunities for improvement
- WG will engage with EBNR to explore how the WG can support EDiNR

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## **Appendix 1**

### **Diagnostic Subcommittee**

#### **Aim**

The committee promotes excellence in diagnostic neuroradiology by supporting experimental and clinical research, education and training. This will be achieved by supporting aspiring, emerging and established neuroradiologists, disseminating knowledge, facilitating networking between the individual members as well as between neuroscience centres, and by supporting large scale funding applications. The committee advises ESNR on research and teaching activities.

#### **Structure**

To achieve these aims and to cover the wide field of diagnostic neuroradiology, working groups (WG) will be established based on diseases or on specific cross-cutting themes. These WG are flexible structures, chaired by a lead, an expert in the field, who will select members of the group, which will vary from one WG to another and will specifically include junior neuroradiologists.

Each WG

1. will identify a specific question or theme they will address;
2. will be encouraged to engage the wider ESNR community in debating this question or theme, using the available ESNR facilities (web site, blog, ESNR section in Neuroradiology, etc.);
3. will engage with appropriate groups in other societies (ESR, ESMRMB, ENS, etc.) to enrich the debate and add more weight to the final outcome;
4. could organise a session at the ESNR annual meeting in which their question or theme would be publicly addressed;
5. will finally produce a guideline, review or position paper that would be published in a peer review journal;
6. will engage with funding organisations and other professional societies to enable and support large scale funding applications.

The prerequisite of a WG is the identification of an engaging leader. The existence of a WG will depend on its activities and productivity thereby allowing a healthy turnover.

In the first instance, the following WGs are suggested:

- a) Disease based: Tumours; epilepsy; dementia; ischaemic stroke; multiple sclerosis; movement disorders; infections; and neuromuscular diseases.
- b) Cross cutting: Quality & Safety; High field (7T) imaging; ASL



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This approach will allow a wide participation of ESNR members; will allow the emergence of the next generation of leaders and teachers and will enable us to establish European Guidelines and publish Review and Position articles.

### **Funding**

To support the WGs in applying for large scale grants and to engage junior neuroradiologists in basic and applied research from the earliest stages possible funding mechanisms are necessary; these would include:

1. Scientific workshops engaging at least 3 centres
2. Research fellowships (1year) in prestigious institutions
3. Seed funds for neuroimaging projects
4. Enabling large scale grant applications (support writing group meetings).

Some of the required moneys could come from the ESNR profits, or could be joined with other national neuroradiological or European Radiological, Neurological and other societies.

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## **Appendix 2**

### **ESNR Diagnostic Subcommittee Working Group on Brain Tumours**

Marion Smits, MD PhD, Erasmus MC, Rotterdam, the Netherlands

Building on my research and leadership activities in the European Organisation for Research and Treatment of Cancer (EORTC), the Brain Tumor Society, and European Society for Magnetic Resonance in Medicine and Biology, I propose to improve the quality and standardisation of brain tumour imaging throughout Europe.

#### **Theme**

The Working Group's theme is state-of-the-art glioma imaging in clinical practice and research trials, focusing on a) standardisation of conventional MR imaging, and b) the role of advanced imaging techniques with MR imaging and PET.

#### **Working group composition**

The working group is composed of both established and more junior experts in the field of brain tumours. These may include experts in the field of neuroradiology and nuclear medicine, MR physics, image analysis, pathology, clinical neuro-oncology and neurosurgery, and radiation therapy. A liaison with respective professional societies is preferred.

The working group actively seeks collaborations with established European networks and associations in these fields, such as the EORTC Brain Tumour and Imaging Groups, European Low Grade Glioma Network (ELGG), the ESMRMB, and the European Association for NeuroOncology (EANO).

#### *Working group composition*

- Assoc. Prof. Marion Smits, Rotterdam/NL (lead; ESNR, ESMRMB, EORTC)
- Prof. Martin Bendszus, Heidelberg/DE (Neuroradiologist; EORTC)
- Prof. Sabine Heiland, Heidelberg/DE (MR physicist; EORTC)
- Dr. Claudia Godi, Milan/IT (Neuroradiologist in training; ESNR)
- Dr. Steffi Thust, London/UK (Neuroradiologist; ESNR)
- Dr. Nathalie Jansen, Munich/DE (Nuclear Medicine Physician; RANO PET task force)
- Dr. Liam Welsh, London/UK (Clinical Oncologist, SNO, BNOS (EORTC and EANO pending))
- Dr. Ander Matheu Fernández, San Sebastián/ES (Neurooncologist)
- Dr. Jorge Villanua, San Sebastián/ES (Neuroradiologist, ESNR, SENR)
- Neurosurgeon
- Liaison ELGG
- Physicist (junior)
- P.m. include industry
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### **Rationale**

Imaging plays a vital role in neuro-oncology, both in a clinical and a research setting. Diagnosis, follow-up and treatment response all highly depend on imaging. Almost invariably, imaging is required to assess secondary endpoints in clinical trials.

For such trials, standardisation of imaging is essential. Within the EORTC brain tumour group (BTG), a clinically feasible MR imaging protocol was developed and subsequently implemented in 2 trials (EORTC-26101 and EORTC-26092) in 2012. The basic protocol includes: 1. pre- and post-contrast 3D high resolution T1 weighted, 2. diffusion weighted, and 3. 2D T2-weighted and T2-FLAIR imaging. This protocol was recently, with minimal adaptations, adopted by the USA's National Brain Tumor Society as consensus recommendations by the Imaging Standardization Steering Committee. Efforts are now aimed at broad implementation of the basic protocol, to enhance both scientific and clinical practice.

Numerous studies have indicated potential added prognostic and diagnostic value of advanced neuroimaging techniques for the work-up and follow-up of brain tumour patients. These include perfusion imaging, diffusion tensor imaging, functional MRI and PET-imaging with a wide range of tracers. Their indications are not yet clear and their implementation not widespread, due to lack of multi-centre trials, assessment of cost-effectiveness and guidelines on implementation.

### **Proposed activities for 2015**

- Communicate the aim and rationale of the Working Group through the ESNR web site, and engage the ESNR membership in active dialogue.
- Bimonthly teleconference with the Working Group; Working Group meeting at the 2015 ESNR annual meeting.
- Position paper on state-of-the-art glioma imaging in clinical practice, to be published in a European journal, either European Radiology (ESR) or Neuroradiology (ESNR).
- Workshop on state-of-the-art glioma MR imaging in clinical practice at the 2015 annual meeting of the ESNR (Naples/IT).
- Endorsement of the Brain Tumor Society white paper on brain tumour imaging standardisation for trials.
- Literature review on advanced imaging techniques, to form the basis of a. recommendations, b. research study proposals; c. workshop at the 2016 ESNR annual meeting.
- Develop and submit proposals for dedicated sessions at upcoming annual meetings of societies with an interest in neuro-oncological imaging, such as EANO, EORTC, ESMRMB.

The progress and achievements of the working group will be presented to and discussed with the ESNR Executive Committee at the 2015 annual meeting in Naples/IT.



### **Appendix 3**

#### **ESNR Diagnostic Subcommittee Working Group on Epilepsy**

Núria Bargalló, MD PhD, Hospital Clínic of Barcelona, Barcelona, Spain.

Advanced techniques such as fMRI have been widely used in epilepsy centers for language lateralization as an important tool for surgical decision. This particularly relevant in this patient group because of the 1) relatively high prevalence of atypical language representation; 2) commonly present cognitive disorders which interfere with commonly used language paradigms. The existing literature in fMRI for language lateralization highlights that there is a wide variability in some of the parameters used for fMRI for language lateralization exams, such as paradigms, MRI sequence parameters, statistical thresholds, etc, that open the question which is the most feasible, reproducible and reliable way to implement language fMRI in the presurgical assessment of epilepsy patients.

#### **Theme**

The WG's theme is to standardize the fMRI protocol for language lateralization in adults and paediatric patients with refractory epilepsy in clinical practice.

#### **Working group composition**

The working group is composed of both established and more junior experts in the field of epilepsy and fMRI. These may include experts in the field of neuroradiology, MR physics, image analysis, neurology, and neuropsychology.

The working group actively seeks collaborations with established European networks and associations in these fields, such as the International league for Epilepsy – Commission on European Affairs, European Society of Radiology, and the European Society of Molecular and Functional Imaging.

##### *Working group composition*

- Dr Núria Bargalló, Barcelona/ES (lead)
- Dr Caroline Micallef, London /UK (Neuroradiologist)
- Dr Horst Urbach, Freiburg/DE (Neuroradiologist)
- Dr. Cristina Rosazza, Milan/IT (Neuropsychologist)
- Dr Alvarez Linera, Neuroradiologist, Madrid/ES
- Laura Mancini PhD, MR physicist, London/UK
- Anna Calvo, MR physicist, Barcelona/ES
- Teresa Boget PhD, Neuropsychologist (Barcelona/ES)
- Neurologist (TBC)

#### **Proposed activities for 2015**

- Communicate the aim and rationale of the working group through the ESNR web site, and engage the ESNR membership in active dialogue.
- Work with the group to define the items that should be discussed by TC.

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### Next steps

- The thus identified items will be discussed followed by a:
  - Literature review
  - Draft paper describing the recommendation/standardization.
- Discuss the preliminary results in the upcoming annual meeting of the ESNR (Naples/IT).

### Proposed activities for 2016

- Beginning to write the paper with the final recommendation.
- Workshop on “How to perform fMRI for language lateralization in clinical practice”, where we will discuss all the items that have been proposed, at the 2016 ESNR annual meeting.
- Propose to organize sessions at upcoming annual meetings of societies with an interest in epilepsy imaging, such as ILAE.

The progress and achievements of the working group will be presented to and discussed with the ESNR Executive Committee at the annual meeting in Naples/IT.

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