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## How to use guidelines for imaging of myocardial perfusion and function

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**Guidelines in general:** Although the number of guidelines (GL) rapidly increases there is no generally accepted definition of GL, but the following is often quoted from an old textbook: Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific circumstances. A clinical GL describes diagnostic, therapeutic or prophylactic interventions recommended, whereas a procedural GL, often used in diagnostic specialties such as nuclear medicine, describes "how to perform" a certain procedure. Some GLs may contain both and are often just called guidelines. A GL must reflect the practice of most physicians, otherwise it will act only as a gold standard to be admired<sup>1</sup>. On the other hand a GL reflects the state-of-art and may be used as indication of deviation from evidence-based medicine in cases of medical negligences<sup>2</sup>.

A European GL for producing GL publications<sup>2</sup> has been established in the so-called AGREE document<sup>3</sup>. The AGREE organization has also published a GL for editorial review of GL publications. The following should be included: Scope and purpose, stakeholder involvement, rigour of development (process used to gather and synthesise the evidence, the methods to formulate the recommendations and to update them), clarity and presentation, applicability, editorial independence, and a response scale. The Society of Nuclear Medicine in 2001 published their "Guideline Development", EANM did not publish similar instructions.

**Contents of European Radionuclide Guidelines:** The recently published, comprehensive European Procedural Guidelines for Myocardial Perfusion Imaging in Nuclear Cardiology<sup>4</sup> include sections on patient information, radiopharmaceuticals, injected activities, dosimetry and radiation exposure, stress tests, imaging protocols, image acquisition, quality control, reconstruction methods, gated myocardial perfusion imaging, attenuation and scatter compensation, data analysis, reports and image display, and positron emission tomography. European GLs on radionuclide imaging of cardiac function are underway and will hopefully be published in 2006. They will include sections on tracers and dosimetry, acquisition of radionuclide ventriculography, RV and LV ejection fractions, LV volumes, LV diastolic function and LV regional function, physics and software, reference values, and clinical indications for RV and LV ejection fractions.

**Must GLs be followed?** It is obvious that procedures performed in a more sophisticated manner than that described in a GL is no problem, if resources are available. But sometimes deviations may also be permissible, if performed in a less sophisticated manner. It should be remembered that a GL is only a recommendation, not a legal paper. In local institutions instructions deviating from national and/or international GLs (sometimes necessary because of particular local needs or equipment etc) may need a written "argument or justification", parallel to a written statement in an individual patient's record, when a procedure is modified compared to the general rule of the department.

**In conclusion,** take care, when following a GL: It must be reasonably updated and recommendations should be evidence-based. If no evidence is available for a particular recommendation, the GL should directly express this lack of documentation. If you deviate significantly from the GL, write down, why you do it. Finally, remember that "enthusiasm for GLs should be tempered with the knowledge that they are fallible and should not be a replacement for clinical judgment or for the previous gold standard: experience<sup>10</sup>.

### References

1. Farmer A. 1993; 307: 313-317
2. Schwartz J et al. Eur Heart J 1999; 20:1152-1157
3. <http://www.sign.ac.uk/methodology/agreeguide/>
4. Hesse B et al.. Eur J Nucl Med 2005; 32:855-97

Other relevant GL references

5. SNM 2002; ([http://interactive.snm.org/docs/pg\\_ch01\\_0403.pdf](http://interactive.snm.org/docs/pg_ch01_0403.pdf))
6. ASNC 2000; <http://www.asnc.org/resources/guidelines.cfm>
7. ACC/AHA/ASNC 2003; <http://www.asnc.org>
8. ESC 2003; <http://www.escardio.org>
9. ACC/AHA J Am Coll Cardiol 1995; 25: 521–547
10. Editorial Lancet 2005; 365:1440–1440.