

New medical technologies are improving diagnosis and treatment, but they are also increasing health spending. This section presents data on the availability and use of two diagnostic technologies: computed tomography (CT) scanners and magnetic resonance imaging (MRI) units. CT scanners and MRI units help physicians diagnose a range of conditions by producing images of internal organs and structures of the body. Unlike conventional radiography and CT scanning, newer imaging technology used in MRI units do not expose patients to ionising radiation.

The availability of CT scanners and MRI units has increased rapidly in most European countries over the past two decades. For example, in the Netherlands, the number of MRI units per capita multiplied by ten between 1990 and 2008, while the number of CT scanners also increased. Similarly, in Italy, the number of MRI scanners per capita multiplied by five between 1997 and 2007, and the number of CT scanners doubled.

In 2008, Greece had the highest number of MRI and CT scanners per capita (together with Cyprus for CT scanners). Switzerland, Iceland, Italy and Austria also had significantly more MRI and CT scanners than the EU average (Figures 3.5.1 and 3.5.2). However, the number of MRI and CT scanners in all European countries remains much lower than in Japan and the United States (OECD, 2010a). The number of MRI units and CT scanners per population were the lowest in Romania and Hungary.

There is no general guideline regarding an ideal number of CT scanners or MRI units per population. However, if there are too few such items of equipment, this may lead to access problems, either in terms of geographic proximity or waiting times. On the other hand, if there are too many, this may result in an overuse of these costly diagnostic procedures, with little if any benefits to patients.

Data on the use of these diagnostic equipment are available only for a smaller group of countries. Based on this more limited country coverage, the number of CT and MRI exams per capita is the highest in Greece, consistent with the fact that Greece also

has the highest number of these two types of scanners (Figures 3.5.3 and 3.5.4). The number of CT and MRI exams per capita is also above average in Belgium, Luxembourg and Iceland. It is the lowest in the Slovak Republic and Czech Republic, as well as in the Netherlands for CT exams.

In Greece, most CT and MRI scanners are installed in the growing number of private diagnostic centres, and only a minority are found in public hospitals. There is no regulation concerning the purchase of MRI units in Greece, while the purchase of CT scanners requires a licence that is granted following a review based on a criteria of population density. There are also no guidelines concerning the use of CT and MRI scanners (Paris *et al.*, 2010). The current situation has led the Greek Ministry of Health and Social Solidarity to establish an expert's committee to review regulations and propose new criteria for the purchase of CT and MRI scanners.

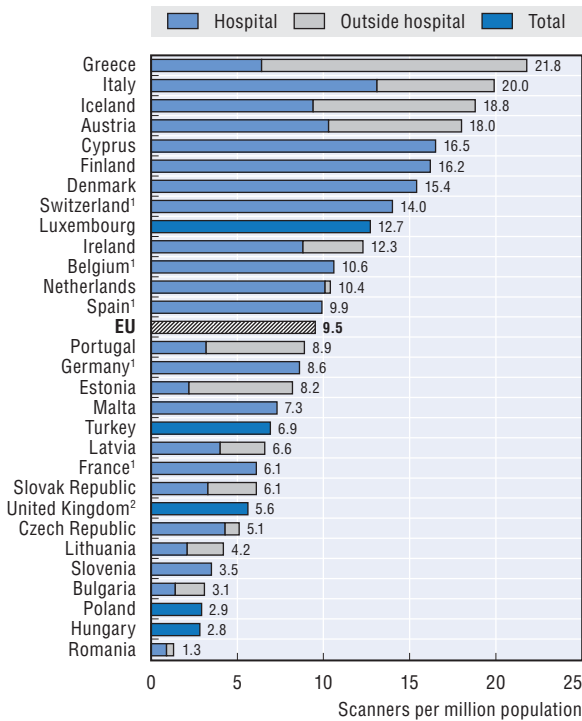
Many other European countries are also examining ways to promote more rational purchase and use of such diagnostic technologies (OECD, 2010b). In the United Kingdom, the National Institute for Health and Clinical Excellence has recently set up a Diagnostics Advisory Committee to evaluate and make recommendations for the appropriate use of diagnostic technologies within the NHS in England (NICE, 2009).

Definition and deviations

The figures relate to the number of CT and MRI scanners per million population.

The data generally cover the equipment installed in hospitals and ambulatory settings, with the exception of Belgium, Germany and Spain where the equipment outside hospitals is not included, and France where only a small number of equipment in ambulatory settings is included. In the United Kingdom, the data refer only to scanners in the public sector.

**3.5.1. Number of MRI units, 2008
(or nearest year available)**

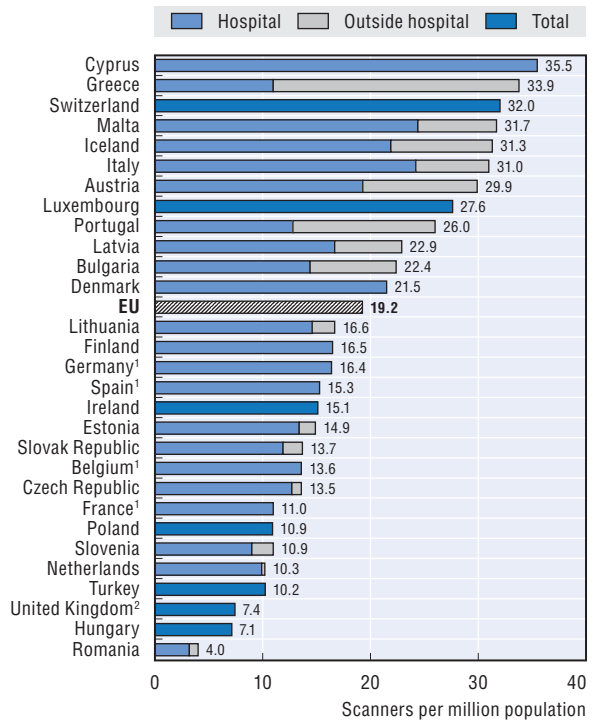


Note: The EU average does not include countries which only report equipment in hospital.

1. Data for equipment outside hospital are not available.
2. In the United Kingdom, any equipment in the private sector is not included in the data.

Source: OECD Health Data 2010; Eurostat Statistics Database.
StatLink <http://dx.doi.org/10.1787/888932336825>

**3.5.2. Number of CT scanners, 2008
(or nearest year available)**

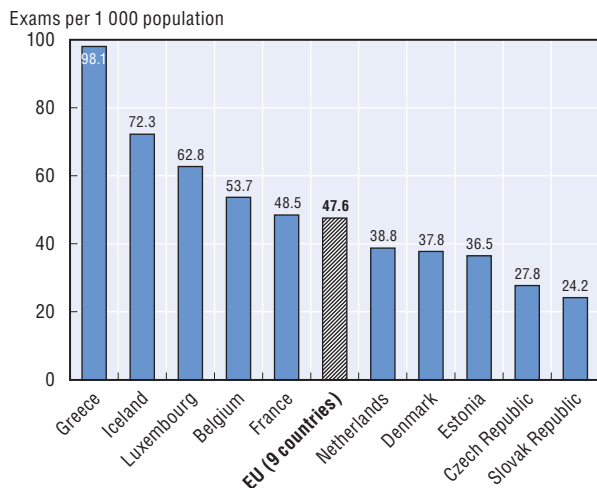


Note: The EU average does not include countries which only report equipment in hospital.

1. Data for equipment outside hospital are not available.
2. In the United Kingdom, any equipment in the private sector is not included in the data.

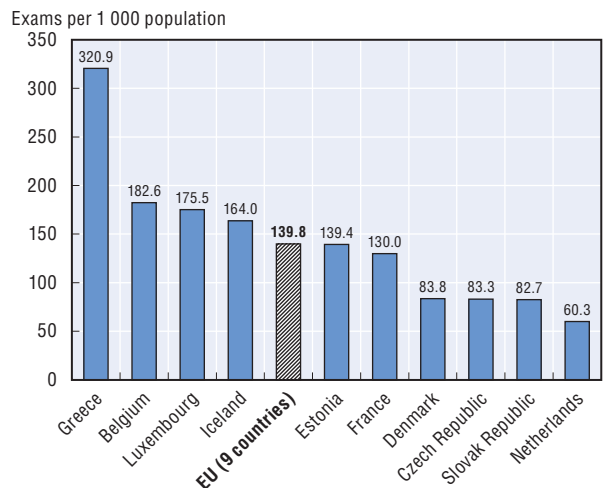
Source: OECD Health Data 2010; Eurostat Statistics Database.
StatLink <http://dx.doi.org/10.1787/888932336844>

**3.5.3. Number of MRI exams, 2008
(or nearest year available)**



Source: OECD Health Data 2010.
StatLink <http://dx.doi.org/10.1787/888932336863>

**3.5.4. Number of CT exams, 2008
(or nearest year available)**



Source: OECD Health Data 2010.
StatLink <http://dx.doi.org/10.1787/888932336882>



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