SOCIETÀ ITALIANA di RADIOLOGIA MEDICA
ITALIAN SOCIETY OF MEDICAL RADIOLOGY

Qualitative-quantitative appropriateness criteria in Diagnostic Imaging

SIRM Documents 2012

QUALITATIVE-QUANTITATIVE APPROPRIATENESS CRITERIA IN DIAGNOSTIC IMAGING

The document “Qualitative-quantitative Appropriateness Criteria in Diagnostic Imaging” was developed during 2011 and endorsed by all members of the working group:
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The “Qualitative-quantitative Appropriateness Criteria in Diagnostic Imaging” was approved unanimously by the SIRM Executive Committee meeting held on January 18, 2012 in Montecatini, Italy.

OVERVIEW

The "Qualitative-quantitative Appropriateness Criteria in Diagnostic Imaging" was presented during the General Assembly and SIRM's 45th Congress. This work SIRM's initial effort to follow in the steps taken by similar European and international institutions and lay down as far as possible objective and useful criteria for assessing and validating the diagnostic imaging services delivered in Italy.

The need for these criteria appeared critical in view of the dramatic rise in the demand and supply of diagnostic imaging services in the absence of any explicit formulation of the levels of appropriateness.

The introduction to the tables outlines the contents of the report submitted to the SIRM Executive Committee on January 18, 2012 by the panel of experts, after consulting SIRM's organ- and technique-oriented Study Sections (as well as the Study Sections on Resource Management and Contrast Media).

The document adopts the Italian Ministry of Health classification of diseases, complemented with a number of procedures that have been either acknowledged at the Regional level or are currently of being incorporated into the list of the new essential levels of care still to be issued by the Government since early 2010.

It would be advisable to ask the Ministry of Health to put in place measures aimed at reviewing the international classification of diseases that should be under way under the name of ICD10.

Interventional radiology procedures were not considered because guidelines were simultaneously being developed by the Ministry of Health, submitted on January 27, 2012.

This document was developed as an initial model on the basis of previously submitted statistical documents on workloads (the latest in 2006), as well as on the analysis and summary review of documents approved by different Regional and Provincial public administration bodies such as those from Campania, Lazio, Piedmont, Tuscany, and Trento, and by similar bodies Europe and other continents.

This initial model will undergo constant review, updating and extension, in particular with regard to the Minimum Performance Requirements (MPR), as explicitly demanded of a modern scientific association that intends to, and is in a position to, inter-relate with similar international associations and bodies and with society at large.

Globalization, with the real-time publication and exchange of information, makes this inevitable. Acknowledgment of new tasks and roles by those who take on specific appointments within the association's Study Sections and Committees is also inevitable.

This document introduces a new pathway for our scientific association which, through the voluntary contribution of members and board members, does not intend to be replaced by panels of experts who, although authoritative, are sectoral in geographic or professional area and extemporaneously consulted by public or private institutions.

Finally, SIRM personally fulfils its mandate to determine the minimum standards of diagnostic imaging procedures without which there can be no certain guarantee of quality, for the safeguard of patients to whom every radiologist has decided to devote his/her own professional life.

SIRM Chairman
Prof. Antonio Rotondo

INTRODUCTION

Five years after publishing the "Reference criteria for determining the productivity of Radiological Services" developed by SIRM and SNR (National Union of Radiologists), SIRM decided to develop qualitative-quantitative appropriateness criteria in diagnostic imaging as its own contribution to meet the demand for appropriateness coming from individuals and institutions in Italy, in Europe, and worldwide at this specific time in history.

The purpose of this document is to contribute to establishing the minimum organizational and professional criteria for institutional accreditation and help each subject involved in creating diagnostic imaging processes in Italy achieve excellence.

The standard references and the values contained in the document are minimum values calculated on an average case mix of activities, both in inpatient and outpatient settings, based on the analysis of national data identified in part with the help of SIRM's Study Sections.

The document was obtained by setting out quality criteria with regard to methodologic value of procedures and patient centeredness, in the form of Minimum Performance Requirements (MPQ), minimum time of use of premises and equipment (room time) and minimum time for performing the radiological or sonographic medical act (radiologist time).

In this context it should be remembered that the radiological medical act consists of:

- analysis of the request for the procedure
- analysis of clinical-anamnestic data with assessment of any previous tests
- justification for the proposed examination (or lack of justification with suggestion for alternative techniques and modalities, if possible)
- patient information for consent and patient's consent
- performance of the examination
- image processing and post-processing
- image interpreting/reporting

The Minimum Performance Requirements represent the essential acquisitions for each imaging procedure, without which the minimum requirements for technical appropriateness are not achieved.

Room Time is the time needed to perform all room preparatory activities as well as all activities physically involving patients, from their arrival to their leaving the room.

Room Time includes:

- Preparation of the imaging room
- Patient's arrival and preparation
- Performance of the examination (machine time)
- Patient's discharge

In the event of multiple examinations, Room Time can be reduced, for examinations following the first one, by a varying, unpredictable, percentage depending on the imaging modality and working conditions.

Room Time was defined based on cooperative patients; with uncooperative patients (children up to 5 years of age, patients over 80 years of age, patients unable to walk) an incremental multiplier of 1.3 can be used.

With examinations performed under sedation, Room Time cannot be determined in advance.

Radiologist Time refers to the time necessary to perform the radiological medical act according to the Quality Assurance Guidelines for Diagnostic and Interventional Radiology prepared by the Istituto Superiore di Sanità and the relevant SIRM documents.

The document was prepared by the working group experts after consultation with the relevant SIRM Study Sections and based on the Methodology for Determining the Activity Volumes and Productivity of Radiologists of 2006 and the subsequent SIRM-SNR-IMS-SAGO activity census of 2010, relevant international research papers and Regional resolutions adopted by several Italian Regions between 2006 and 2011 (see References).

The values obtained reflect the Radiologist's procedural activity for each examination, which should be distinguished from "Room Time". These values provide scientifically robust benchmarks that are validated by the authoritativeness of the analytical process and are useful for assessing the appropriateness and correct use of resources during both the planning stage and when assessing efficiency ex post.

The 2006 document stated the need to "*Adapt this instrument to all aspects of technological progress in diagnostic radiology and to the rapidly rising demand for diagnostic imaging that accounts for the age-old, at times unsolvable problem of waiting lists in a population that wants an increasingly better healthcare system*". It continued: "*The methodological approach adopted is based on controlled field tests and statistically weighted evaluations introduced by the working group whenever they were faced with professional aspects that could not be optimized during the examination. The study performed and validated in the field does not consider the number of examinations itself but reasserts the notion, introduced in previous surveys, of the chest x-ray equivalent weighted activity volume, a notion that eliminates the differences, in terms of weight/procedure, between the various types of examination performed in one or more different imaging departments. The weight used is related to the actual professional activity of the radiologist, i.e. the time required to perform the activity if good radiological practices are applied, from arrival of the patient to reporting and communication of results*".

These concepts are considered to be still relevant so that the evaluation tables of the chest x-ray equivalent weighted activity volume, revised to account for technological changes and in particular digitization, can be re-proposed in the same form and manner as in the previous document with only quantitative variations resulting from changes in diagnostic, technical and clinical operational capacity.

For x-ray procedures (conventional radiology) the suggested Room Time refers to the time required for a procedure using an analogical or indirect digital imager (CR). This may be cut by 20% if direct digital systems are used.

For ultrasound procedures Room Time and Radiologist Time largely coincide, while the preparation time required for a patient arriving and leaving is counterbalanced by the radiologist's clinical interpretation and reporting time.

As for CT procedures, the impact on examination time of the type of equipment available, nowadays mostly multislice, is not significant.

As for MRI, differences among the equipment used precluded any standardization of Room Time, with different time periods being identified for different equipment classes (class A up to 1 Tesla; class B from 1 Tesla upwards). Some tests are only considered feasible in the presence of certain class B systems. This notion, however, is already incorporated in many recent Italian Regional resolutions often adopted with the cooperation of the SIRM Regional Groups. Furthermore, in consideration of the multiparametric variability of the modality, the Radiologist Time intrinsically related to the acquisition of the MRI study is made up of Radiologist Time A or B, and coincides, with few exceptions, with Room Time, as patient preparation time overlaps with reporting time

SIRM, a body representing Italian radiology, believes that this document should be used to evaluate minimum quality and appropriateness requirements by all public and private institutions concerned with the production and assessment of diagnostic imaging activities at all facilities and in all clinical, educational, administrative and legal medicine settings.

Since this area is susceptible to constant evolution and change due to developments in technology and knowledge, we recommend that a permanent working group be set up for periodic review of the document, in keeping with similar documents developed by equivalent institutions at the international level.

References

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- SIRM SNR Metodologia di determinazione dei volumi di attività e della produttività dei medici radiologi 2006. www.sirm.org/documenti
- SIRM SNR AINR Censimento Nazionale delle Risorse Umane e Tecnologiche dell'Area Radiologica (supplemento al Radiologo 3-2010) Omicron Editore, Genova
- TRENTO APPS Criteri di correttezza tecnica per l'esecuzione di esami ecografici http://www.apss.tn.it/Public/allegati/DOC_645222_0.doc
- TRENTO APPS Criteri di correttezza tecnica per l'esecuzione di esami di Risonanza Magnetica http://www.apss.tn.it/Public/allegati/DOC_645226_0.doc

CODE	DESCRIPTION	MINIMUM PERFORMANCE REQUIREMENTS (as per the European guidelines listed in the References and the criteria developed by the SIRM Study Sections)	ROOM TIME (min)	RADIOLOGIST TIME (min)
87.04.1	X-RAY OF LARYNX INCLUDING TOMOGRAPHY. Examination without contrast and dynamic examination	At least 4 tomograms at rest and 3 during phonation	**20**	**15**
87.05	DACRYOCYSTOGRAPHY	At least 3 documented scans	**20**	**30**
87.06	PHARYNGOGRAPHY Includes: examination without contrast	Falls within the swallowing study protocol	**15**	**20**
87.06.1	X-RAY OF SALIVARY GLANDS WITH CONTRAST, UNILATERAL STUDY Includes: examiantion without contrast	Introduction of iodinated water or fat-soluble contrast agent through cannulation of the glandular duct. Acquisition of at least two radiograms in the AP and oblique projections	**20**	**30**
87.07	LARINGOGRAPHY WITH CONTRAST Includes: examination without contrast	Examination in 2 projections	**15**	**20**
87.09.1	X-RAY OF THE SOFT TISSUES OF FACE, HEAD, AND NECK Examination without contrast of: larynx, nasopharynx, salivary glands	2 orthogonal projections	**10**	**6**
87.09.2	X-RAY OF THE PHARYNGO-CRICO-ESOPHAGEAL-CARDIAL SEGMENT Functional study of the upper digestive tract, with barium or water-soluble contrast material. Includes: videorecording	Videorecording for at least 3 min.	**40**	**50**
87:11:01	X-RAY OF THE DENTAL ARCH	1 panoramic radiogram obtained using an orthopantomograph	**10**	**6**
87.11.2	X-RAY WITH AN OCCLUSAL VIEW OF THE DENTAL ARCHES. Two arches: upper and lower	1 acquisition	**10**	**6**
87.11.3	ORTHOPANTOMOGRAPHY OF DENTAL ARCHES Complete upper and lower dental arches (OPT)	1 panoramic radiogram obtained using an orthopantomograph	**10**	**6**
87.11.4	TOMOGRAPHY OF DENTAL ARCHES	No longer used in radiologic clinical practice	**10**	**10**

87.12.1	CRANIAL TELERADIOGRAPHY For orthodontic cephalometry	1 radiogram in lateral projection (if necessary one PA projection or both projections)	**10**	**6**
87.12.2	INTRAORAL X-RAY. Not associable with 89.7B.5	1 acquisition for every two elements	**10**	**6**
87.13.1	UNILATERAL TEMPOROMANDIBULAR ARTHROGRAPHY Includes: examination without contrast	No longer used in radiologic clinical practice		
87.13.2	TEMPOROMANDIBULAR ARTHROGRAPHY WITH BILATERAL CONTRAST Including: examination without contrast	No longer used in radiologic clinical practice		
87:16:01	OTHER X-RAY OF FACIAL BONES	2 orthogonal projections	**10**	**6**
87:16:02	TOMOGRAPHY OF THE TEMPOROMANDIBULAR JOINT. Bilateral baseline and dynamic. Includes: examination without contrast	At least 6 tomographic acquisitions	**15**	**10**
87.16.3	UNILATERAL TOMOGRAPHY OF THE TEMPOROMANDIBULAR JOINT. Includes: examination without contrast	At least 6 tomographic acquisitions	**15**	**10**
87.16.4	BILATERAL TOMOGRAPHY OF THE TEMPOROMANDIBULAR JOINT. Includes: examination without contrast	At least 4 tomographic acquisitions	**15**	**10**
87.16.6	UNILATERAL X-RAY OF THE TEMPOROMANDIBULAR JOINT	To be performed with an OPT device	**10**	**6**
87.16.7	X-RAY OF THE HEMIMANDIBLE	Single oblique projection	**10**	**6**
87:17:02	X-RAY OF THE SELLA TURCICA	At least 2 projections	**10**	**6**
87.17.3	RADIOLOGICAL ASSESSMENT OF CEREBROSPINAL FLUID SHUNTS	At least 2 projections	**10**	**6**

87.17.4	STANDARD X-RAY OF SKULL.	At least 3 projections	**10'**	**6**
87.22.1	STANDARD X-RAY OF THE CERVICAL SPINE. Not associable with 87.22.2; 87.22.3	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.22.2	X-RAY OF THE CERVICAL SPINE - A DYNAMIC STUDY Not associable with 87.22.1; 87.22.3;	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**13**	**10**
87.22.3	STANDARD X-RAY OF THE CERVICAL SPINE WITH A DYNAMIC STUDY Not associable with 87.22.1; 87.22.2	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**13**	**10**
87.23.1	STANDARD X-RAY OF THE THORACIC SPINE. Not associable with 87.23.2; 87.23.3	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.23.2	X-RAY OF THE THORACIC SPINE - DYNAMIC STUDY. Not associable with 87.23.1; 87.23.3	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.23.3	X-RAY OF THE THORACIC SPINE WITH OBLIQUE PROJECTIONS. Not associable with 87.23.1; 87.23.2	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**13**	**10**
87.23.4	THORACIC VERTEBRAL MORPHOMETRIC X-RAY. Evaluation of the heights of vertebral bodies on LL x-ray of the spine for the quantitative definition of a benign osteoporotic fracture, with either radiological or DXA techniques. Not associable with 87.23.1; 87.23.2; 87.23.3	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**10**
87.24.1	X-RAY OF LUMBOSACRAL SPINE. Not associable with 87.24.2; 87.24.3; 87.24.4; 87.24.5	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.24.2	X-RAY OF THE LUMBOSACRAL SPINE - DYNAMIC STUDY. Not associable with 87.24.1; 87.24.3; 87.24.4; 87.24.5	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**13**	**10**
87.24.3	STANDARD X-RAY OF THE LUMBOSACRAL SPINE WITH OBLIQUE PROJECTIONS. Not associable with 87.24.1; 87.24.3; 87.24.4; 87.24.5;	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**13**	**10**

87.24.4	STANDARD X-RAY OF THE SACROCOCCYX. Not associable with 87.24.1; 87.24.2; 87.24.3; 87.24.4; 87.24.5	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.24.5	LUMBAR VERTEBRAL MORPHOMETRIC X-RAY. Evaluation of the heights of vertebral bodies on a lateral x-ray of the spine for the quantitative definition of a benign osteoporotic fracture, with either radiological or DXA techniques. Not associable with 87.24.1; 87.24.2; 87.24.3; 87.24.4; 87.24.5	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**10**
87.29	FULL WEIGHT-BEARING X-RAY OF SPINE AND PELVIS.	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**10**
87.35	UNILATERAL GALACTOGRAPHY [DUCTOGRAPHY, DUCTOGALACTOGRAPHY]	Procedure performed in compliance with the appropriateness criteria laid out in the FONCAM guidelines	**30**	**40**
87.37.1	BILATERAL MAMMOGRAPHY	Bilateral mammography in the two standard projections complying with the appropriateness criteria defined by the Study Section	**15**	**20**
87.37.2	UNILATERAL MAMMOGRAPHY	Unilateral mammography in the two standard projections complying with theappropriateness criteria defined by the Study Section	**10**	**15**
87.43.1	BILATERAL SKELETAL SURVEY OF THE RIBS. Radiographic survey of thoracic skeleton excluding the vertebral column	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**13**	**10**
87.43.3	UNILATERAL SKELETAL SURVEY OF THE RIBS.	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.43.4	X-RAY OF THE STERNUM	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.43.5	X-RAY OF THE CLAVICLE	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
87.44.1	X-RAY OF THE CHEST	An examination performed in the standard projections and complying with the appropriateness criteria defined at a European level	**10**	**6**

87.54.1	TRANSCATHETER CHOLANGIOGRAPHY. Including an examination without contrast	At least 3 documented acquisitions	**15**	**20**
87.61	COMPLETE X-RAY OF THE DIGESTIVE TRACT WITH BARIUM OR WATER-SOLUBLE CONTRAST MATERIAL	At least 10 documented acquisitions	**35**	**40**
87.62	SINGLE CONTRAST X-RAY OF THE UPPER GASTROINTESTINAL TRACT WITH BARIUM OR WATER-SOLUBLE CONTRAST Serial study of the upper gastrointestinal tract (esophagus, stomach and duodenum)	At least 6 documented acquisitions	**20**	**25**
87.62.1	X-RAY OF THE ESOPHAGUS WITH A SINGLE CONTRAST AGENT	At least 3 documented acquisitions	**10**	**15**
87.62.2	DOUBLE CONTRAST X-RAY OF THE ESOPHAGUS	At least 4 documented acquisitions	**10**	**15**
87.62.3	DOUBLE CONTRAST X-RAY OF THE ESOPHAGUS, STOMACH AND DUODENUM. Not associable with 87.61, 87.62, 87.62.1, 87.62.2, 87.63, 87.64.1, 87.65.1, 87.65.2, 87.65.3	At least 10 documented acquisitions	**25**	**30**
87.63	SINGLE CONTRAST SERIAL STUDY OF THE SMALL INTESTINE	At least 5 documented acquisitions	**25**	**30**
87.64.1	INTESTINAL TRANSIT TIME	At least 2 documented acquisitions	**20**	**25**
87.65.1	SIMPLE CONTRAST ENEMA WITH BARIUM OR WATER-SOLUBLE CONTRAST	At least 5 documented acquisitions	**25**	**30**
87.65.2	DOUBLE-CONTRAST COLON ENEMA	At least 10 documented acquisitions	**30**	**40**
87.65.3	DOUBLE-CONTRAST SMALL INTESTINE ENEMA (with enteroclysis)	At least 8 documented acquisitions	**40**	**50**
87.69.2	LOOPOGRAM FOR ANORECTAL ATRESIA	At least 2 documented acquisitions	**15**	**20**
87.69.3	DEFECOGRAPHY	At least 5 documented acquisitions	**15**	**20**
87.69.4	ENTERO-COLPO-CYSTO-DEFECOGRAPHY	At least 5 documented acquisitions	**30**	**40**
87.73	INTRAVENOUS UROGRAPHY Includes: examination without contrast, cystography and possible renal tomography	At least 10 documented acquisitions	**30**	**40**
87.74.1	UNILATERAL RETROGRADE PYELOGRAPHY. Includes: examination without contrast	At least 4 documented acquisitions	**30**	**40**

87.74.2	BILATERAL RETROGRADE PYELOGRAPHY Includes: examination without contrast	At least 8 documented acquisitions	**40**	**50**
87.75.1	UNILATERAL TRANSPYELOSTOMIC PYELOGRAPHY. Includes: examination without contrast	At least 3 documented acquisitions	**15**	**20**
87.76	RETROGRADE AND VOIDING CYSTOURETHROGRAPHY	At least 7 documented acquisitions	**40**	**50**
87.76.1	VOIDING CYSTOURETHROGRAPHY	At least 5 documented acquisitions	**20**	**30**
87.79.1	RETROGRADE URETHROGRAPHY	At least 4 documented acquisitions	**20**	**30**
87.83	HYSTEROSALPINGOGRAPHY Includes: examination without contrast	At least 6 documented acquisitions	**20**	**30**
88.03.2	FISTULOGRAPHY	Non standardizable	**15**	**20**
88.19	ABDOMINAL X-RAY [X-RAY OF THE ABDOMEN] [X-RAY OF THE VOIDED URINARY SYSTEM] WITHOUT CONTRAST	At least 2 documented acquisitions	**10**	**6**
88.21.1	X-RAY OF THE UPPER THORACIC OUTLET - STUDY OF THE CLAVICLE AND OF THE STERNOCLAVICULAR JOINT	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.21.2	X-RAY OF THE SHOULDER	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.21.3	X-RAY OF THE ARM	Examination conducted in the standard projections	**10**	**6**
88.22.1	X-RAY OF THE ELBOW	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.22.2	X-RAY OF THE FOREARM	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.23.1	X-RAY OF THE WRIST	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**

88.23.2	X-RAY OF THE HAND	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.26.1	X-RAY OF THE PELVIS AND OF THE SACROILIAC JOINTS	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.26.2	X-RAY OF THE HIP	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.27.1	X-RAY OF THE FEMUR	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.27.2	X-RAY OF THE KNEE	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.27.3	X-RAY OF THE LEG	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.28.1	X-RAY OF THE ANKLE	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.28.2	X-RAY OF THE FOOT	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**6**
88.29.1	FULL X-RAY OF WEIGHT-BEARING LOWER EXTREMITIES AND PELVIS	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**10**
88.29.3	DYNAMIC STUDY OF JOINTS UNDER STRESS (AND/OR WEIGHT-BEARING) For each peripheral joint	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**10**	**10**
88.31.1	FULL X-RAY OF AN INFANT	At least 1 documented acquisition	**13**	**10**
88.32	ARTHROGRAPHY WITH CONTRAST. Excluding arthrography of the temporomandibular joint (87.13.1, 87.13.2).	Examination not used in clinical radiological practice		

88.33.1	STUDY OF BONE AGE	0-18 years X-ray of the left hand and wrist. Evaluation according to Greulich-Pyle. *Greulich WW, PyleSI:Radiographic Atlas of Skeletal Development of the Hand Wrist, 2nd edition. Stanford, CA: Stanford University Press, 1959.*	**10**	**20**
88.99.3	BONE DENSITOMETRY - WHOLE BODY DXA	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**20**	**6**
88.99.6	BONE DENSITOMETRY - LUMBAR DXA	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**15**	**6**
88.99.7	BONE DENSITOMETRY - FEMORAL DXA	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**15**	**6**
88.99.8	BONE DENSITOMETRY - ULTRADISTAL DXA	Examination conducted in the standard projections and complying with the appropriateness criteria defined by the Study Section	**15**	**6**

CODE	DESCRIPTION	Minimum performance requirements (MPR)	ROOM TIME (min) RADIOLOGIST TIME (min)
88.71.1	US ENCEPHALOGRAPHY Transfontanellary ultrasound	Patency of the anterior fontanelle A minimum of 3 coronal scans and 3 sagittal scans. Micro-convex probe and linear probe for the peripheral spaces of the vault	**10**
88.71.2	TRANSCRANIAL DOPPLER STUDY With spectral analysis after a physical or pharmacologic stress test	Through bone windows with pre- and post-stress evaluation	**20**
88.71.3	TRANSCRANIAL COLOR-DOPPLER US	Through bone windows with pre- and post-stress evaluation	**20**
88.71.4	US DIAGNOSIS OF THE HEAD AND NECK Ultrasonography of: major salivary glands, thyroid, parathyroid glands, muscular structures of the neck, lymph node groups	Evaluation of the floor of the mouth, major salivary glands, lymph nodes of the neck and, on specific request, of the thyroid. Documentation of orthogonal scans for each organ	**20**
88.71.5	TRANSCRANIAL COLOR-DOPPLER US WITH AND WITHOUT CONTRAST	Through bone windows before and after IV contrast	**30**
	ULTRASONOGRAPHY OF THE EYE	With a dedicated probe	**15**
	COLOR-DOPPLER US OF THE EYE	With a dedicated probe	**20**
88.71.6	TRANSCRANIAL DOPPLER MONITORING FOR A MICROEMBOLISM [MESh].	With a dedicated probe	**15**
88.72.5	FETAL CARDIAC (COLOR) DOPPLER US	With dedicated probe and sw	**20**
88.73.1	BILATERAL BREAST US. Including ultrasound of the axillary cavity	Study of the parenchyma and of the overlying layers. Adequate documentation of at least one image for each quadrant and one image of the axillary cavity	**20**
88.73.2	UNILATERAL BREAST US. Including ultrasound of the axillary cavity	As for bilateral US	**20**
88.73.3	CHEST US.	Evaluation of the parenchyma and of the pleural cavity, heart excluded	**20**
88.73.5	(COLOR) DOPPLER US OF SUPRA-AORTIC TRUNKS. Including: carotid, vertrebral, brachiocephalic and subclavian trunks. At rest or after a physical or pharmacologic stress test. Evaluation of quantitative and semiquantitative indicators.	Morphological and flowmetry evaluation, in baseline conditions and after stimulation of SATs	**30**
88.73.6	(COLOR) DOPPLER US OF THE NECK VEINS. Including: jugular, subclavian, innominate veins.	Morphological and flowmetry evaluation, in baseline conditions and after stimulation of the neck vessels	**20**
88.73.7	COLOR DOPPLER US OF PARATHYROID GLANDS	Morphological and functional evaluation without IV contrast, of glandular structures and internal low.	**20**

88.74.1	UPPER ABDOMINAL US Including: liver, biliary tract, gallbladder, spleno-portal venous axis, pancreas, spleen, kidneys, abdominal aorta and large vessels with supraumbilical site or course, lymph nodes, any pathologic masses of peritoneal or retroperitoneal origin. Including possible integration with color Doppler. Not associable with 88.75.1, 88.76.1	Study and document with orthogonal scans at least the liver, biliary tract, gallbladder, pancreas, spleen, kidneys, aorta, portal axis	**20**
88.74.6	US STUDY OF THE GASTRIC EMPTYING TIME. Including possible color Doppler integration	Morphological and functional study of the stomach with continuous observation for at least 15 min	**20**
88.74.7	US STUDY OF GASTROESOPHAGEAL REFLUX. Including possible color Doppler integration	Morphological and functional study of the gastroesophageal junction with continuous observation for at least 15 min	**20**
88.74.8	US OF THE DIGESTIVE TRACT. Including possible color Doppler integration	Study the stomach and the intestine	**20**
88.74.9	COLOR-DOPPLER US OF RENAL ARTERIES. Study of renovascular hypertension. Including qualitative and semiquantitative indicators	Morphological and flowmetry evaluation in baseline conditions and after stimulation of renal arteries. Documentation of Doppler trace at the emergence, at middle third and at hilum	**30**
88.74.A	COLOR-DOPPLER US OF SPLANCHNIC VESSELS. Including a morphological evaluation and qualitative and semiquantitative indicators	Morphological and flowmetry evaluation in baseline conditions and after stimulation of splanchnic vessels	**20**
88.75.1	US OF THE LOWER ABDOMEN. Including: ureters, bladder, prostate, male or female pelvis. Not associable with 88.74.1, 88.76.1, 88.79.5, 88.79.6	Study and document with orthogonal scans at l	**20**
88.76.1	US OF THE ENTIRE ABDOMEN. Not associable with 88.74.1, 88.75.1	Study and analyze at least liver, biliary tract, gallbladder, pancreas, spleen, aorta, kidneys, bladder, pelvis.	**20**
88.76.3	COLOR DOPPLER US OF LARGE ABDOMINAL ARTERIAL OR VENOUS VESSELS. Excluding splanchnic vessels	Study of the abdopminal aorta, iliac arteries, ilac veins and inferior vena cava	**30**
88.76.4	COLOR DOPPLER US OF LARGE ABDOMINAL ARTERIAL OR VENOUS VESSELS WITH OR WITHOUT CONTRAST.TH OR WITHOUT CONTRAST. Excluding splanchnic vessels	Study of the abdopminal aorta, iliac arteries, ilac veins and inferior vena cava	**30**
88.76.5	COLOR-DOPPLER US OF SPLANCHNIC VESSELS	Morphological and flowmetry evaluation with documentation of splanchnic vessels in baseline conditions	**20**
88.76.6	COLOR-DOPPLER US OF SPLANCHNIC VESSELS WITH CONTRAST	Flowmetry evaluation of splanchnic vessels after contrast	**30**
88.77.4	COLOR-DOPPLER US OF THE ARTERIES AND/OR VEINS OF THE LOWER EXTREMITIES. At rest. Including evaluation of quantitative and semiquantitative indicators.	Flowmetry evaluation of the vessels of lower extremities. Documentation of common and superficial femoral arteries, popliteal artery, and tibial arteries. Documentation of Doppler trace of superficial and deep venous circulation at various levels	**20**
88.77.5	COLOR-DOPPLER US OF THE ARTERIES AND/OR VEINS OF LOWER EXTREMITIES. At rest and after physical or pharmacologic stress test. Including evaluation of qualitative and semiquantitative indicators.	Flowmetry evaluation of the vessels of lower extremities. After stimulation or on exertion	**30**

88.77.6	COLOR-DOPPLER US OF THE ARTERIES AND/OR VEINS OF UPPER EXTREMITIES. At rest. Including evaluation of quantitative and semiquantitative indicators.	Flowmetry evaluation of the vessels of upper extremities. Documentation of the subclavian, axillary and brachial arteries. Documentation of the Doppler trace of superficial and deep circulation at various levels	**20**
88.77.7	COLOR-DOPPLER US OF THE ARTERIES AND/OR VEINS OF UPPER EXTREMITIES. At rest or after either physical or pharmacologic stress test. Including evaluation of quantitative and semiquantitative indicators.	Flowmetry evaluation of the vessels of lower extremities after stimulation or on exertion	**30**
88.78.1	US MONITORING OF THE OVULATORY CYCLE. Not associable with: lower abdominal US 88.75.1, whole abdominal US 88.76.1. /(a minimum of 4 sessions)	See lower abdominal ultrasound for the first session and evaluation of the adnexa in the subsequent ones	**15 (per session)**
88.78.2	GYNECOLOGICAL US with an abdominal or transvaginal probe. Not associable with 88.75.1 and 88.76.1	See lower abdominal and/or transvaginal ultrasound	**20**
88.79.1	ULTRASOUND OF SKIN AND SUBCUTANEOUS TISSUE. Study of soft tissues.	High-resolution multi-frequency electronic linear probes, power Doppler module. At least 2 orthogonal scans for each region examined	**20**
88.79.3	MUSCULOTENDINEOUS AND OSTEOARTICULAR ULTRASOUND. For each joint or muscle region.	High-resolution multi-frequency electronic linear probes, power Doppler module. At least 2 orthogonal scans for each region examined	**20**
	ULTRASOUND OF SKIN AND SUBCUTANEOUS TISSUE WITH IV CONTRAST. Study of soft tissues.	High-resolution probes, power Doppler module. At least 2 orthogonal scans documented for each region examined	**20**
	MUSCULOTENDINEOUS AND OSTEOARTICULAR ULTRASOUND WITH IV CONTRAST For each joint or muscle region. Including possible color Doppler integration	High-resolution multi-frequency electronic linear probes, power Doppler module. At least 2 orthogonal scans documented for each region examined	**20**
88.79.2	HIP ULTRASOUND IN INFANTS	0-3 months according to method of Graf. *R. Graf:Hip Sonography Diagnosis and Management of Infant Hip Dysplasia Springer-Verlag Berlin and Heidelberg GmbH & Co. K 14 Agosto 2006 (REV)*	**20**
88.79.4	TRANSESOPHAGEAL CHEST ULTRASOUND	dedicated probe	**30**
88.79.5	PENIS ULTRASOUND. Not associable with 88.79.D	High-resolution multi-frequency electronic linear probes, power Doppler module. Baseline study of penis	**20**
88.79.6	SCROTAL ULTRASOUND. Including testicles and testicular adnexa.	Dedicated linear probes. Study of testicles and epididymes, scrotal sac, spermatic cord	**20**

88.79.8	TRANSRECTAL ULTRASOUND Including ultrasound of the lower abdomen. Not associable with 88.75.1 and 88.76.1	Study of the prostate in men, st*udy of the pelvic organs in women*	**20**
88.79.9	ULTRASOUND OF THE INGUINOCRURAL REGION. Including possible color Doppler integration	Study of vesicoureteral reflux in subjects aged 0 - 14 years	**20**
88.79.A	ABDOMINAL WALL ULTRASOUND. Study of hernia or muscle diastasis. Including possible color Doppler integration	Dedicated linear and surface probe	**20**
88.79.B	CYSTOSONOGRAPHY WITH CONTRAST. Not associable with 88.75.1	Study of vesicoureteral reflux in subjects aged 0 - 14 years. Documentation of study planes and of any abnormalities detected	**30**
88.79.C	TRANSESOPHAGEAL MEDIASTINAL ULTRASOUND Not associable with 88.72.4	Dedicated endoscopic US probe	**30**
88.79.D	DYNAMIC COLOR-DOPPLER US OF PENIS WITH DRUG STIMULATION. Including a morphological evaluation and qualitative and semiquantitative indicators. Not associable with 88.79.5	Morphological and vascular study of the corpora cavernosa of penis. Indicated in the analysis of erectile dysfunctions	**30**
88.79.E	SCROTAL COLOR-DOPPLER US. Study of varicocele and testicular torsion. Including a morphological evaluation and qualitative and semiquantitative indicators	Dedicated linear probe study of testicles, epididymes, scrotal sac, spermatic cord	**20**
88.79.F	ENDOANAL ULTRASOUND Including possible color Doppler integration	Morphologic study and documentation of the anal canal	**20**
88.79.G	TRANSRECTAL PROSTATE ULTRASOUND. Including ultrasound of the lower abdomen. Including possible color Doppler integration. Not associable with 88.75.1 and 88.76.1	Study of prostate in men	**20**
88.79.H	ORGAN-TARGETED ULTRASOUND WITH CONTRAST. Including a possible integration of color Doppler.	Dedicated probe with a dedicated algorithm for contrast administration baseline study	**30**
88.79.J	ULTRASOUND CONTRAST DURING BASELINE EXAMINATIO	Dedicated probe with a dedicated *algorithm for contrast administration*	**10**
88.79.K	ULTRASOUND OF INTESTINAL LOOPS. Not associable with 88.74.1, 88.75.1 e 88.76.1	Study of the small and large intestine	**20**
88.99.5	ULTRASOUND BONE DENSITOMETRY	Adequate documentation of results on the segments	**20**
87.83.1	HYSTEROSALPINGO-CONTRAST SONOGRAPHY not associable with 87.83 and 87.83.2	Morphological study and documentation, after introduction of liquid, of the female pelvic organs and patency of fallopian tubes	**30**
87.83.2	HYSTEROSONOGRAPHY not associable with 88.78.2	Morphological study and documentation, after introduction of liquid, of the female pelvis organs	**30**

CODE	DESCRIPTION	MINIMUM PERFORMNCE REQUIREMENTS	ROOM TIME	RADIOLOGIST TIME
87.03	BRAIN CT Not associable with CT of the Sella Turcica (87.03.A) and CT of the Orbits (87.03.C)	Reconstruction thickness not exceeding 4 mm.	**12**	**15**
87.03.1	BRAIN CT WITHOUT AND WITH CONTRAST Not associable with CT of the Sella Turcica with and without contrast (87.03.B) and CT of the Orbits with and without contrast (87.03.D)	Reconstruction thickness not exceeding 4 mm.	**15**	**18**
87.03.2	CT OF FACIAL BONES [jaw, mandible, paranasal sinuses, ethmoid bone, temporomandibular joints]	Acquisition with a thickness < 2 mm Reformatting in the coronal planes. If required, 3D reconstruction (COD.88.90.2)	**12**	**15**
87.03.3	CT OF FACIAL BONES WITHOUT AND WITH CONTRAST [maxillary, mandibular, paranasal sinuses, ethmoid bone, temporomandibular joints]	Acquisition with a thickness < 2 mm Reformatting in the coronal planes. If required, 3D reconstruction (COD.88.90.2) of arterial and equilibrium phase images	**15**	**18**
87.03.5	CT OF THE EAR [middle and internal ear, petrous bones and mastoids, base of skull and cerebellopontine angle]	Acquisition with a thickness < 1 mm Reformatting in the coronal planes.	**12**	**15**
87.03.6	CT OF THE EAR WITHOUT AND WITH CONTRAST [middle and internal ear, petrous bones and mastoids, base of skull and cerebellopontine angle]	Acquisition with a thickness < 1 mm Reformatting in the coronal planes. Single post-contrast acquisition in the late phase	**15**	**18**
87.03.7	CT OF THE NECK [salivary glands, thyroid and parathyroid glands, pharynx, larynx, cervical esophagus]	Acquisition with a thickness < 3 mm Reformatting in the coronal planes.	**12**	**15**
87.03.8	CT OF THE NECK WITHOUT AND WITH CONTRAST [salivary glands, thyroid and parathyroid glands, pharynx, larynx, cervical esophagus]	Scan with a thickness < 3 mm Reformatting in the coronal planes At least 2 spirals after contrast in order to assess the arterial and equilibrium phases	**15**	**18**
87.03.9	CT OF SALIVARY GLANDS [SIALO-CT]	Scan with a thickness < 2 mm Reformatting in the coronal planes If required, at least 1 spiral after contrast in the ductal system	**20**	**30**
87.03.A	CT OF THE SELLA TURCICA (selective study)	Reconstruction thickness not exceeding 2 mm.	**12**	**15**
87.03.B	CT OF THE SELLA TURCICA WITHOUT AND WITH CONTRAST (selective study)	Reconstruction thickness not exceeding 2 mm.	**15**	**18**

87.03.C	CT OF THE ORBITS (selective study)	Reconstruction thickness not exceeding 2 mm.	**12**	**15**
87.03.D	CT OF THE ORBITS WITHOUT AND WITH CONTRAST (selective study)	Reconstruction thickness not exceeding 2 mm.	**15**	**18**
87.03.E	CT OF A SINGLE DENTAL ARCH [DENTALSCAN]	Scan with a thickness < 1 mm PANOREX reformatting and para-axial reconstructions for each dental element	**12**	**15**
87.03.F	CT OF THE DENTAL ARCHES [DENTALSCAN]	Scan with a thickness < 1 mm PANOREX reformatting and para-axial reconstructions for each dental element	**15**	**18**
87.41	CT OF THE CHEST [lungs, thoracic aorta, trachea, esophagus, sternum, ribs, mediastinum]	Single breath-hold. Thin layers with possible MPR reconstruction	**12**	**18**
87.41.1	CT OF THE CHEST WITHOUT AND WITH CONTRAST [lungs, thoracic aorta, trachea, esophagus, sternum, ribs, mediastinum]	Single breath-hold. Thin layers with possible MPR reconstruction	**20**	**25**
87.41.2	HIGH-RESOLUTION CT OF THE CHEST	Thickness < 2 mm	**15**	**18**
87.42.4	CARDIAC CT	Prospective cardiac synchronization. Collimation 2-3 mm	**15**	**18**
87.42.5	CARDIAC CT WITHOUT AND WITH CONTRAST	Prospective or retrospective cardiac synchronization. Collimation ≤ 1 mm.	**40**	**60**
87.42.6	CORONARY CT ANGIOGRAPHY	Prospective or retrospective cardiac synchronization. Collimation ≤ 1 mm.	**40**	**60**
88.01.1	UPPER ABDOMINAL CT. Including: liver and biliary tract, pancreas, spleen, retroperitoneal space, stomach, duodenum, small bowel, large abdominal vessels, kidneys and adrenal glands	1 scan, thickness ≤ 5 mm	**12**	**18**

88.01.2	UPPER ABDOMINAL CT WITHOUT AND WITH CONTRAST. Including: liver and biliary tract, pancreas, spleen, retroperitoneal space, stomach, duodenum, small bowel, large abdominal vessels, kidneys and adrenal glands	At least 3 scans, thickness ≤ 3 mm	**20**	**25**
88.01.3	LOWER ABDOMINAL CT. Including: pelvis, colon and rectum, bladder, uterus and adnexa or prostate	1 scan, thickness ≤ 5 mm	**12**	**18**
88.01.4	LOWER ABDOMINAL CT WITHOUT AND WITH CONTRAST. Including: pelvis, colon and rectum, bladder, uterus and adnexa or prostate	3 scans slice thickness ≤ 3 mm	**20**	**25**
88.01.5	CT OF THE WHOLE ABDOMEN	1 scan, slice thickness ≤ 5 mm	**12**	**20**
88.01.6	CT OF THE WHOLE ABDOMEN WITHOUT AND WITH CONTRAST	At least 3 scans, slice thickness ≤ 3 mm	**20**	**30**
	CT OF THE STOMACH WITH CONTRAST	1 scan, slice thickness ≤ 5 mm, + MPR	**15**	**20**
88.01.7	MULTIPHASE LIVER CT. Not associable with 88.01.1 and 88.01.2	4 scans, thickness ≤ 3 mm	**20**	**25**
88.01.8	SMALL BOWEL CT [ENEMA CT] (with enteroclysis). Including a possible study of the extraintestinal abdomen. Not associable with 88.01.1 and 88.01.2	1 scan, thickness ≤ 3 mm, + MPR	**40**	**60**
	SMALL BOWEL CT WITH CONTRAST (orally)	1 scan, thickness ≤ 3 mm + MPR	**10**	**15**
88.01.9	COLON CT. Including a possible study of the extraintestinal abdomen and virtual colonoscopy. Not associable with 88.01.1, 88.01.2, 88.01.3, 88.01.4, 88.01.5, 88.01.6.	1 scan, thickness ≤ 3 mm + MPR	**30**	**40**
	VIRTUAL CT COLONOSCOPY	2 scans + 2D, 3D virtual study, etc.	**20**	**20**
88.02.1	CT UROGRAPHY. Including a possible study of the extraurinary abdomen. Not associable with 88.01.1, 88.01.2, 88.01.3, 88.01.4, 88.01.5, 88.01.6.	At least 3 scans, thickness ≤ 1.25 mm	**20**	**30**

88.38.5	CT OF THE PELVIS AND SACROILIAC JOINTS	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.8	CT ARTHROGRAPHY Shoulder, elbow or knee	At least 1 scan, thickness ≤ 1.25 mm	**30**	**40**
88.38.9	WHOLE BODY CT FOR ONCOLOGICAL STAGING. At least three anatomic regions	see required regions	**30**	**40**
88.38.A	CT OF THE SPINAL COLUMN AND OF THE CERVICAL SPINAL CANAL Including a possible evaluation of neck structures. Not associable with 87.03.7 and with 88.38.9	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.B	CT OF THE SPINAL COLUMN AND OF THE THORACIC SPINAL CANAL. Including a possible evaluation of chest structures. Not associable with 87.41, 87.41.1, 87.41.2, 88.38.9	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.C	CT OF THE SPINAL COLUMN, OF THE LUMBOSACRAL SPINAL CANAL AND OF THE SACRUM/COCCYX. Including a possible evaluation of chest structures. Not associable with 88.01.1, 88.01.3, 88.01.5, 88.38.9	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.D	CT OF THE SPINAL COLUMN AND OF THE CERVICAL SPINAL CANAL WITHOUT AND WITH CONTRAST. Including a possible evaluation of neck structures. Not associable with 87.03.8 and 88.38.9	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.E	CT OF THE SPINAL COLUMN AND OF THE THORACIC SPINAL CANAL WITHOUT AND WITH CONTRAST. Including a possible evaluation of chest structures. Not associable with 87.41, 87.41.1, 87.41.2, 88.38.9	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.F	CT OF THE SPINAL COLUMN, OF THE LUMBOSACRAL SPINAL CANAL AND OF THE SACRUM/COCCYX WITHOUT AND WITH CONTRAST. Including a possible evaluation of abdominal structures. Not associable with 88.01.2, 88.01.4, 88.01.6, 88.38.9	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.G	CT OF THE SHOULDER. Not associable with 88.38.H and 88.38.N	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.H	CT OF THE ARM. Not associable with 88.38.G and 88.38.N	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.J	CT OF THE ELBOW. Not associable with 88.38.K and 88.38.P	At least 1 scan, thickness ≤ 3 mm	**12**	**15**

88.38.K	CT OF THE FOREARM. Not associable with 88.38.J and 88.38.P	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.L	CT OF THE WRIST. Not associable with 88.38.M and 88.38.Q	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.M	CT OF THE HAND. Not associable with 88.38.L and 88.38.Q	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.N	CT OF SHOULDER AND ARM. Not associable with 88.38.G and 88.38.H	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.P	CT OF ELBOW AND FOREARM. Not associable with 88.38.J and 88.38.K	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.Q	CT OF WRIST AND HAND. Not associable with 88.38.L and 88.38.M	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.38.R	CT OF THE SHOULDER WITHOUT AND WITH CONTRAST. Not associable with 88.38.S and 88.38.X	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.S	CT OF THE ARM WITHOUT AND WITH CONTRAST. Not associable with 88.38.R and 88.38.X	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.T	CT OF THE ELBOW WITHOUT AND WITH CONTRAST. Not associable with 88.38.U and 88.38.Y	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.U	CT OF THE FOREARM WITHOUT AND WITH CONTRAST. Not associable with 88.38.T and 88.38.Y	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.V	CT OF THE WRIST WITHOUT AND WITH CONTRAST. Not associable with 88.38.W and 88.38.Z	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.W	CT OF THE HAND WITHOUT AND WITH CONTRAST. Not associable with 88.38.V and 88.38.Z	At least 1 scan, thickness ≤ 3 mm	**15**	**18**

88.38. X	CT OF SHOULDER AND ARM WITHOUT AND WITH CONTRAST. Not associable with 88.38.R and 88.38.S	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38.Y	CT OF THE ELBOW AND FOREARM WITHOUT AND WITH CONTRAST. Not associable with 88.38.T and 88.38.U	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.38. Z	CT OF THE WRIST AND HAND WITHOUT AND WITH CONTRAST. Not associable with 88.38.V and 88.38.W	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.39.2	CT OF THE COXOFEMORAL JOINT. Not associable with 88.39.3 and 88.38.5	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.3	CT OF THE THIGH [CT OF THE FEMUR]. Not associable with 88.39.2, 88.38.5 and 88.39.4	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.4	CT OF THE KNEE. Not associable with 88.39.3 and 88.39.5	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.5	CT OF THE LEG. Not associable with 88.39.4 and 88.39.6	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.6	CT OF THE ANKLE. Not associable with 88.39.7 and 88.39.5	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.7	CT OF THE FOOT. Not associable with 88.39.6	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.8	CT OF KNEE AND LEG. Not associable with 88.39.4 and 88.39.5	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.9	CT OF ANKLE AND FOOT. Not associable with 88.39.7 and 88.39.6	At least 1 scan, thickness ≤ 3 mm	**12**	**15**
88.39.A	CT OF THE COXOFEMORAL JOINT WITHOUT AND WITH CONTRAST. Not associable with 88.39.B and 88.38.5	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.39.B	CT OF THE THIGH [CT OF THE FEMUR] WITHOUT AND WITH CONTRAST. Not associable with 88.39.A and 88.39.C	At least 1 scan, thickness ≤ 3 mm	**15**	**18**

88.39.C	CT OF THE KNEE WITHOUT AND WITH CONTRAST Not associable with 88.39.B and 88.39.D	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.39.D	CT OF THE LEG WITHOUT AND WITH CONTRAST. Not associable with 88.39.C and 88.39.E	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.39.E	CT OF THE ANKLE WITHOUT AND WITH CONTRAST. Not associable with 88.39.D and 88.39.F	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.39.F	CT OF THE FOOT WITHOUT AND WITH CONTRAST. Not associable with 88.39.E	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.39.G	CT OF KNEE AND LEG WITHOUT AND WITH CONTRAST. Not associable with 88.39.C and 88.39.D	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
88.39.H	CT OF ANKLE AND FOOT WITHOUT AND WITH CONTRAST. Not associable with: 88.39.9, 88.39.E and 88.39.F	At least 1 scan, thickness ≤ 3 mm	**15**	**18**
inserted	CT ARTHROGRAPHY (ARTHRO-CT) OF THE WRIST	At least 1 scan, thickness ≤ 1.25 mm	**30**	**40**
inserted	CT ARTHROGRAPHY (ARTHRO-CT) OF THE HIP	At least 1 scan, thickness ≤ 1.25 mm	**30**	**40**
inserted	CT ARTHROGRAPHY (ARTHRO-CT) OF THE ANKLE	At least 1 scan, thickness ≤ 1.25 mm	**30**	**40**
88.41.1	CT ANGIOGRAPHY OF INTRACRANIAL VESSELS. Not associable with 88.41.2 and 88.41.3	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**40**
88.41.2	CT ANGIOGRAPHY OF VESSELS AND OF THE NECK [CAROTID ARTERIES]. Not associable with 88.41.1 and 88.41.3	Pre-contrast and arterial phase evaluation in a caudal-cranial acquisition of both carotid vascular axes	**20**	**40**
88.41.3	CT ANGIOGRAPHY OF INTRACRANIAL AND NECK VESSELS [CAROTID ARTERIES]. Not associable with 88.41.1 and 88.41.2	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**50**
88.43	CT ANGIOGRAPHY OF THE PULMONARY CIRCULATION	Single breath-hold. Thin slices with possible MPR reconstruction	**20**	**30**

88.44.1	CT ANGIOGRAPHY OF THE THORACIC AORTA. Not associable with 88.47.1 and 88.47.2	Single beath-hold. Thin slices with possible MPR reconstruction	**20**	**30**
88.45	CT ANGIOGRAPHY OF RENAL ARTERIES. Not associable with 88.45.1	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**30**
88.45.1	CT ANGIOGRAPHY OF THE ABDOMINAL AORTA AND OF THE RENAL ARTERIES. Not associable with 88.45 and 88.47.1	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**30**
88.47.1	CT ANGIOGRAPHY OF THE ABDOMINAL AORTA. Not associable with 88.44.1 and 88.47.2	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**30**
88.47.2	CT ANGIOGRAPHY OF THE THORACO-ABDOMINAL AORTA. Not associable with 88.44.1 and 88.47.1	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**30**
88.47.3	CT ANGIOGRAPHY OF THE ABDOMINAL AORTA AND OF THE LOWER EXTREMITIES. Not associable with 88.48.1 and 88.47.1	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**50**
88.48.1	CT ANGIOGRAPHY OF THE LOWER EXTREMITIES Not associable with 88.47.1 and 88.47.3	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**40**
88.49.2	CT ANGIOGRAPHY OF THE UPPER EXTREMITIES	1 scan with contrast, thickness ≤ 1.25 mm with MPR and 3D reconstruction	**20**	**40**

CODE	DESCRIPTION	MINIMUM PERFORMANCE REQUIREMENTS	ROOM TIME A	RADIOLOGIST TIME A	ROOM TIME B	RADIOLOGIST TIME B
			A < 1T	MT A	B > = 1T	MT B
88.91.1	MRI OF BRAIN AND BRAIN STEM, OF THE CRANIOSPINAL JUNCTION AND OF ITS VASCULAR REGION	At least 5 scans and sequences in the different scanning planes with a thickness not exceeding 5 mm.	30	30	20	20
88.91.2	MRI OF BRAIN AND BRAIN STEM, OF THE CRANIOSPINAL JUNCTION AND OF ITS VASCULAR REGION WITHOUT AND WITH CONTRAST	At least 5 scans and sequences in the different scanning planes and 3 after IV contrast with a thickness not exceeding 5 mm.	40	40	30	30
88.91.5	MR ANGIOGRAPHY OF THE INTRACRANIAL VASCULAR REGION	TOF sequence with multiplanar reconstructions	not performable	not performable	20	20
88.91.6	MRI OF THE NECK [pharynx, larynx, parotid-salivary glands, thyroid-parathyroid glands]. Including: respective vascular region	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES	30	30	20	20
88.91.7	MRI OF THE NECK WITHOUT AND WITH CONTRAST [pharynx, larynx, parotid-salivary glands, thyroid-parathyroid glands]. Including: respective vascular region	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES + 1 DYNAMIC SEQUENCE AND 2 SEQUENCES AFTER CONTRAST	40	40	30	30
88.91.8	MR ANGIOGRAPHY OF NECK VESSELS	TOF sequence with multiplanar reconstructions	not performable	not performable	20	20
88.91.A	MRI OF THE FACIAL BONES [jaw, mandible, nasal cavities, paranasal sinuses, ethmoid bone]. Including: respective vascular region. Not associable with 88.91.B, 88.91.C; 88.91.D; 88.91.E; 88.91.F	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES	30	30	20	20
88.91.B	MRI OF THE UNILATERAL AND/OR BILATERAL TEMPOROMANDIBULAR JOINT. Including: respective vascular region. Including any possible dynamic examination. Not associable with 88.91.A, 88.91.C; 88.91.D; 88.91.E; 88.91.F	EXAMINATION TO BE PERFORMED WITH A DEDICATED ANTENNA, BILATERAL IF POSSIBLE, WITH T1 AND T2 ACQUISITIONS IN THE THREE ORTHOGONAL PLANES WITH DYNAMIC EVALUATION IN THE SAGITTAL PLANE	40	40	30	30

88.91.C	MRI OF THE SELLA TURCICA. Including: respective vascular region. Not associable with 88.91.A; 88.91.B, 88.91.D; 88.91.E; 88.91.F	At least 5 acquisitions and sequences in the various scanning planes with a thickness not exceeding mm.	**30**	**30**	**20**	**20**
88.91.D	MRI OF THE PETROUS BONES. Including: respective vascular region. Not associable with 88.91.A; 88.91.B, 88.91.C; 88.91.E; 88.91.F	At least 5 acquisitions and sequences in the various scanning planes with a thickness not exceeding 2 mm and possible performance of high-contrast sequences within 1 mm.	**30**	**30**	**20**	**20**
88.91.E	MRI OF THE ORBITS. Including: respective vascular region. Not associable with 88.91.A; 88.91.B, 88.91.C; 88.91.D; 88.91.F	At least 5 acquisitions and sequences in the various scanning planes with a thickness not exceeding 3 mm and fat-suppressed sequences.	**30**	**30**	**20**	**20**
88.91.F	MRI OF THE WHOLE FACIAL SKELETON. Multilocal study of two or more segments/regions. Including: respective vascular region. Not associable with 88.91.A; 88.91.B, 88.91.C; 88.91.D; 88.91.E	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES	**30**	**30**	**20**	**20**
88.91.G	MRI OF THE FACIAL SKELETON WITHOUT AND WITH CONTRAST [jaw, mandible, nasal cavities, paranasal sinuses, ethmoid bone]. Including: respective vascular region. Not associable with 88.91.H, 88.91.J, 88.91.K, 88.91.L, 88.91.M	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES + 1 DYNAMIC SEQUENCE AND 2 SEQUENCES AFTER CONTRAST	**40**	**40**	**30**	**30**
88.91.6	MRI OF THE NECK	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES	**30**	**30**	**20**	**20**
88.91.7	MRI OF THE NECK WITHOUT AND WITH CONTRAST	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES + 1 DYNAMIC SEQUENCE AND 2 SEQUENCES AFTER CONTRAST	**40**	**40**	**30**	**30**
88.91.H	MRI OF THE UNILATERAL OR BILATERAL TEMPOROMANDIBULAR JOINT WITHOUT AND WITH CONTRAST. Including: respective vascular region. Including any possible dynamic examination. Not associable with 88.91.G, 88.91.J, 88.91.K, 88.91.L, 88.91.M	EXAMINATION TO BE PERFORMED WITH A DEDICATED ANTENNA, BILATERAL IF POSSIBLE, WITH T1 AND T2 ACQUISITIONS IN THE THREE ORTHOGONAL PLANES AND WITH DYNAMIC EVALUATION IN THE SAGITTAL PLANE	**40**	**40**	**30**	**30**
88.91.J	MRI OF THE SELLA TURCICA WITHOUT AND WITH CONTRAST. Including: respective vascular region. Not associable with 88.91.G, 88.91.H, 88.91.K, 88.91.L, 88.91.M	At least 5 scans and sequences in the various scanning planes with a thickness not exceeding 3 mm and sequences, including dynamic sequences, after IV contrast	**40**	**40**	**30**	**30**
88.91.K	MRI OF THE PETROUS BONES WITHOUT AND WITH CONTRAST. Including: respective vascular region. Not associable with 88.91.G, 88.91.H, 88.91.J, 88.91.L, 88.91.M	At least 5 acquisitions and sequences in the various scanning planes with a thickness not exceeding 2 mm, possible performance of high-contrast sequences within 1 mm and sequences with a thickness not exceeding 2 mm after IV contrast.	**40**	**40**	**30**	**30**
88.91.L	MRI OF THE ORBITS WITHOUT AND WITH CONTRAST. Including: respective vascular region. Not associable with 88.91.G, 88.91.H, 88.91.J, 88.91.K, 88.91.M	At least 5 acquisitions and sequences in the various scanning planes with a thickness not exceeding 3 mm and fat-suppressed sequences, before and after IV contrast.	**40**	**40**	**30**	**30**

88.91.M	MRI OF THE WHOLE FACIAL SKELETON WITHOUT AND WITH CONTRAST. Multilocal study of two or more segments. Including: respective vascular region. Not associable with 88.91.G, 88.91.H, 88.91.J, 88.91.K, 88.91.L	AT LEAST 4 SEQUENCES IN THE 3 ORTHOGONAL PLANES + 1 DYNAMIC SEQUENCE AND 2 SEQUENCES AFTER CONTRAST	**40**	**40**	**30**	**30**
88.91.N	MR ANGIOGRAPHY OF THE INTRACRANIAL VASCULAR REGION WITHOUT AND WITH CONTRAST	Two-phase technique after IV contrast	**not performable**	**not performable**	**20**	**20**
88.91.P	MRI ANGIOGRAPHY OF THE NECK VESSELS WITHOUT AND WITH CONTRAST	AT LEAST 1 SEQUENCE WITH A SUBTRACTION TECHNIQUE AND CONTRAST	**40**	**40**	**30**	**30**
88.91.Q	QUANTITATIVE MRI CEREBROSPINAL FLUID FLOWMETRY with a phase-contrast technique.	TOF sagittal and axial sequence targeted at the aqueduct of Silvius	**not performable**	**not performable**	**20**	**20**
88.91.R	QUANTITATIVE MRI CEREBROSPINAL FLUID FLOWMETRY ASSOCIATED WITH A BASELINE EXAMINATION	At least 5 acquisitions and sequences in the various scanning planes with a thickness not exceeding 5 mm and a TOF sagittal and axial sequence targeted at the aqueduct of Silvius	**not performable**	**not performable**	**35**	**35**
88.91.S	FUNCTIONAL MRI STUDIES OF CORTICAL ACTIVATION	According to radiologist's clinical indication	**not performable**	**not performable**	**40**	**40**
88.91.T	FUNCTIONAL MRI STUDIES OF CORTICAL ACTIVATION ASSOCIATED WITH A BASELINE EXAMINATION	According to radiologist's clinical indication	**not performable**	**not performable**	**60**	**60**
88.92	CHEST MRI [mediastinum, esophagus, lungs, chest wall] Including: the respective vascular region	Either breath-hold or with respiratory gating	**not performable**	**not performable**	**20**	**20**
88.92.1	CHEST MRI WITHOUT AND WITH CONTRAST [mediastinum, esophagus, lungs, chest wall] Including: the respective vascular region	Either breath hold or with respiratory gating	**not performable**	**not performable**	**30**	**30**
88.92.2	MRI ANGIOGRAPHY OF THE THORACIC REGION	At least two dynamic T1-weighted post-contrast sequences Max. thickness 2 mm	**not performable**	**not performable**	**30**	**30**
88.92.3	CARDIAC CINE MRI	Prospective cardiac synchronization. IR-FSE sequences. Minimum planes Short Axis and Long Axis	**not performable**	**not performable**	**20**	**20**

88.92.4	KINEMATIC MRI OF THE HEART WITHOUT AND WITH CONTRAST	Prospective cardiac synchronization. IR-FSE and IR-FGR post-contrast sequences. Minimum planes Short Axis and Long Axis	**not performable**	**not performable**	**30**	**30**
88.92.5	KINEMATIC MRI OF THE HEART. Without and with functional stress	Retrospective cardiac synchronization. Steady State Sequences. Minimum planes Short Axis and Long Axis	**not performable**	**not performable**	**60**	**60**
88.92.9	UNI- AND/OR BILATERAL BREAST MRI WITHOUT AND WITH CONTRAST	Bilateral breast MRI complying with the accuracy criteria defined by the StudySection	**not performable**	**not performable**	**30**	**30**
	BILATERAL BREAST MRI WITHOUT CONTRAST (IMPLANTS)	Bilateral breast MRI complying with the accuracy criteria for the study of a prosthesis defined by the Study Section	**not performable**	**not performable**	**20**	**30**
	UNILATERAL BREAST MRI WITHOUT CONTRAST (IMPLANT)	Unilateral breast MRI complying with the accuracy criteria for the study of a prosthesis defined by the Study Section	**not performable**	**not performable**	**30**	**20**
	PERCUTANEOUS TRU-CUT BREAST BIOPSY UNDER MR GUIDANCE (CAD)	MRI-guided tru-cut breast biopsy complying with the accuracy criteria defined by the Study Section	**not performable**	**not performable**	**50 (40)/65***	**50 (40)/65***
	PERCUTANEOUS BREAST BIOPSY UNDER MR GUIDANCE (CAD) AND VAB	MRI-guided VAB breast biopsy with CAD centering complying with the accuracy criteria defined by the Study Section	**not performable**	**not performable**	**45 (35)/60***	**45 (35)/60***
	MRI-GUIDED LOCALIZATION FOLLOWING AN MRI-GUIDED BIOPSY (CAD)	Detection following an MRI-guided breast biopsy in the same session, complying with the accuracy criteria defined by the Study Section	**not performable**	**not performable**	**10**	**10**
	MRI-GUIDED LOCALIZATION (CAD)	Detection following an MRI-guided breast biopsy, complying with the accuracy criteria defined by the Study Section	**not performable**	**not performable**	**40 (30) (with max 50)**	**40 (30) (with max 50)**
88.93.2	MRI OF THE CERVICAL SPINE. Not associable with 88.93.6	At least 4 sagittal and axial acquisitions	**30**	**30**	**20**	**20**
88.93.3	MRI OF THE DORSAL SPINE. Not associable with 88.93.6	At least 4 sagittal and axial acquisitions	**30**	**30**	**20**	**20**
88.93.4	MRI OF THE LUMBOSACRAL SPINE. Not associable with 88.93.6	At least 4 sagittal and axial acquisitions	**30**	**30**	**20**	**20**
88.93.5	MRI OF THE SACROCOCCYGEAL SPINE. Not associable with 88.93.6	At least 4 sagittal and axial acquisitions	**30**	**30**	**20**	**20**

88.93.6	MRI OF THE WHOLE VERTEBRAL COLUMN. Not associable with 88.93.2, 88.93.3, 88.93.4, 88.93.5	At least 8 sagittal and axial acquisitions	**60**	**60**	**30**	**30**
88.93.7	MRI OF THE CERVICAL SPINE WITHOUT AND WITH CONTRAST. Not associable with 89.93.B	At least 6 sagittal and axial acquisitions before and after IV contrast	**40**	**40**	**30**	**30**
88.93.8	MRI OF THE THORACIC SPINE WITHOUT AND WITH CONTRAST. Not associable with 89.93.B	At least 6 sagittal and axial acquisitions before and after IV contrast	**40**	**40**	**30**	**30**
88.93.9	MRI OF THE LUMBOSACRAL SPINE WITHOUT AND WITH CONTRAST. Not associable with 89.93.B	At least 6 sagittal and axial acquisitions before and after IV contrast	**40**	**40**	**30**	**30**
88.93.A	MRI OF THE SACROCOCCYGEAL SPINE WITHOUT AND WITH CONTRAST. Not associable with 89.93.B	At least 6 sagittal and axial acquisitions before and after IV contrast	**40**	**40**	**30**	**30**
88.93.B	MRI OF THE WHOLE VERTEBRAL COLUMN WITHOUT AND WITH CONTRAST. Not associable with 88.93.7, 88.93.8, 88.93.9, 88.93.A	At least 10 sagittal and axial acquisitions before and after IV contrast	**80**	**80**	**40**	**40**
88.93.C	MR ANGIOGRAPHY OF THE SPINAL CORD WITH CONTRAST	Only with a two-phase technique after IV contrast	**not performable**	**not performable**	**40**	**40**
88.94	MR ARTHROGRAPHY. Including a baseline examination. For each joint region. Not associable with 88.32 and with MRI of the affected articular region	At least 5 sequences (2 pre-contrast and 3 post-contrast)	**40**	**40**	**30**	**30**
88.94.4	MRI OF THE SHOULDER. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.5	MRI OF THE ARM. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.6	MRI OF THE ELBOW. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.7	MRI OF THE FOREARM. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.8	MRI OF THE WRIST. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.9	MRI OF THE HAND. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.A	MRI OF THE PELVIS. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.B	MRI OF THE UNILATERAL AND/OR BILATERAL COXOFEMORAL JOINT. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**30**

88.94.C	MRI OF THE THIGH [MRI OF THE FEMUR]. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.D	MRI OF THE KNEE. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.E	MRI OF THE LEG. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**20**
88.94.F	MRI OF THE ANKLE. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**30**
88.94.G	MRI OF THE FOOT. Including soft tissues, vascular region	At least 4 sequences minimum thickness < 4 mm	**30**	**30**	**20**	**30**
88.94.H	MRI OF THE SHOULDER WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.J	MRI OF THE ARM WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.K	MRI OF THE ELBOW WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.L	MRI OF THE FOREARM WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.M	MRI OF THE WRIST WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.N	MRI OF THE HAND WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.P	MRI OF THE PELVIS WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.Q	MRI OF THE UNILATERAL AND/OR BILATERAL COXOFEMORAL JOINT WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**

88.94.R	MRI OF THE THIGH [MRI OF THE FEMUR] WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.S	MRI OF THE KNEE WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.T	MRI OF THE LEG WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.U	MRI OF THE ANKLE WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.V	MRI OF THE FOOT WITHOUT AND WITH CONTRAST. Including soft tissues, vascular region	At least 5 sequences minimum thickness < 4 mm	**40**	**40**	**30**	**30**
88.94.W	MR ANGIOGRAPHY OF LOWER EXTREMITIES	At least 4 sequences minimum thickness < 2 mm	**not performable**	**not performable**	**20**	**20**
88.94.X	MR ANGIOGRAPHY OF UPPER EXTREMITIES	At least 4 sequences minimum thickness < 2 mm	**not performable**	**not performable**	**20**	**20**
88.94.Y	MR ANGIOGRAPHY OF LOWER EXTREMITIES WITHOUT AND WITH CONTRAST	At least 6 sequences, subtraction, minimum thickness < 2 mm	**not performable**	**not performable**	**30**	**30**
88.94.Z	MR ANGIOGRAPHY OF UPPER EXTREMITIES WITHOUT AND WITH CONTRAST	At least 4 sequences minimum thickness < 2 mm	**not performable**	**not performable**	**30**	**30**
88.95.1	MRI OF THE UPPER ABDOMEN. Including: liver and biliary tract, spleen, pancreas, kidney and adrenal glands, retroperitoneal space, and the respective vascular region	At least 6 axial and coronal acquisitions in baseline conditions	**not performable**	**not performable**	**20**	**20**
88.95.2	MRI OD THE UPPER ABDOMEN, WITHOUT AND WITH CONTRAST Including: liver and biliary tract, spleen, pancreas, kidney and adrenal glands, retroperitoneal space, and the respective vascular region	At least 6 axial and coronal acquisitions + IV contrast	**not performable**	**not performable**	**30**	**30**
88.95.3	MR ANGIOGRAPHY OF THE UPPER ABDOMEN	Fast 3D scans	**not performable**	**not performable**	**20**	**20**

88.95.4	MRI OF THE LOWER ABDOMEN AND PELVIC CAVITY. Including the respective vascular region	At least 5 scans in the 3 spatial planes	**30**	**30**	**20**	**20**
88.95.5	MRI OF THE LOWER ABDOMEN AND OF THE PELVIC CAVITY WITHOUT AND WITH CONTRAST. Including the respective vascular region	At least 5 scans in the 3 spatial planes + contrast	**40**	**40**	**30**	**30**
88.95.6	MR ANGIOGRAPHY OF THE LOWER ABDOMEN	Fast 3D scans	**not performable**	**not performable**	**20**	**20**
88.95.7	MRI ANGIOGRAPHY OF THE UPPER ABDOMEN WITHOUT AND WITH CONTRAST	Fast 3D scans before and after contrast	**not performable**	**not performable**	**30**	**30**
88.95.8	MRI OF GROIN - SCROTUM AND/OR PENIS. Including the respective vascular region.	At least 5 scans in the axial and sagittal planes	**30**	**30**	**20**	**20**
88.95.9	MRI OF THE GROIN - SCROTUM AND/OR PENIS WITHOUT AND WITH CONTRAST. Including the respective vascular region. Not associable with 88.95.5	At least 5 scans in the axial and sagittal planes + IV contrast	**40**	**40**	**30**	**30**
88.95.A	MRI ANGIOGRAPHY OF THE LOWER ABDOMEN WITHOUT AND WITH CONTRAST	Fast 3D scans before and after contrast	**not performable**	**not performable**	**30**	**30**
88.95.B	ENDOCAVITARY MRI	At least 5 scans in the 3 spatial planes	**not performable**	**not performable**	**20**	**20**
88.95.C	ENDOCAVITARY MRI WITHOUT AND WITH CONTRAST	At least 6 scans in the 3 spatial planes	**not performable**	**not performable**	**30**	**30**
88.95.D	MRI OF THE LOWER ABDOMEN WITH DYNAMIC STUDY OF THE PELVIC FLOOR	At least 4 sequences	**30**	**30**	**20**	**20**
inserted	SMALL BOWEL MR ENTEROGRAPHY WITH CONTRAST (with a tube)	At least 13 sequences	**60**	**60**	**45**	**45**
inserted	SMALL BOWEL MRI WITH CONTRAST (orally)	At least 13 sequences	**60**	**60**	**45'**	**45**
inserted	LARGE BOWEL MRI COLONOGRAPHY WITH CONTRAST	At least 9 sequences	**60**	**60**	**45'**	**45**

88.95.E	MR UROGRAPHY	MRI pyelography with Haste and/or T2w single-shot TSE sequences. A single and thick-slice technique (90-110 mm) -Multislice technique (2-4 mm) Coronal, axial, and/or sagittal scans. Optional conventional MRI study with T1 and T2 sequences (breath-hold or triggered). -512 x512 T2w TSE, thin scans (2-3 mm) in the coronal plane. -Axial and/or coronal True Fisp (optional). G3 3D volumetric excretory MR urography (VIBE, THRIVE, LAVA) with coronal FS, fast-bolus post-GD, with acquisition in the arterial, parenchymal and late phases eliminated by the kidney (between 5 and 10-15 minutes). Possible integration with a conventional MRI study	**not performable**	**not performable**	**30**	**30**
88.95.F	FETAL MRI	An examination to be performed after 2nd-level US (if possible at referral centers), upon a targeted provisional diagnosis from the nineteenth week on. Device with a 1.5 T field Sequences in the axial, coronal and sagittal planes T2-weighted single-shot turbo-spin-echo sequences Flair sequences T1-weighted gradient-echo sequences without and with FS DWI sequences with b values of 50 200 700 SSFP sequences	**not performable**	**not performable**	**40**	**40**
88.97.1	DIFFUSION MRI Including diffusion tensor imaging.	Suspected vascular or expansile pathology	**not performable**	**not performable**	**10**	**10**
88.97.2	DIFFUSION MRI ASSOCIATED WITH A BASELINE EXAMINATION. Including diffusion tensor imaging.	Suspected vascular or expansile pathology	**tensor cannot be performed. 30'**	**not performable**	**40**	**40**
88.97.3	MR SPECTROSCOPY	Either single or multivoxel	**not performable**	**not performable**	**20**	**20**
88.97.4	MR SPECTROSCOPY ASSOCIATED WITH A BASELINE EXAMINATION	Either single or multi-voxel with the same parameters as the baseline examination	**not performable**	**not performable**	**50**	**50**
88.97.5	PERFUSION MRI	Always, before and after IV contrast, vascular and expansile pathology, development of parametric maps	**not performable**	**not performable**	**10**	**10**
88.97.6	PERFUSION MRI ASSOCIATED WITH A BASELINE EXAMINATION	Always before and after IV contrast, vascular and expansile pathology, with development of parametric maps	**not performable**	**not performable**	**40**	**40**
88.97.7	DIFFUSION-PERFUSION MRI		**not performable**	**not performable**	**20**	**20**
88.97.8	DIFFUSION-PERFUSION MRI WITHOUT AND WITH CONTRAST ASSOCIATED WITH A BASELINE EXAMINATION		**not performable**	**not performable**	**50**	**50**

88.97.9	MRI OF THE DIGESTIVE TRACT WITH ORAL CONTRAST Not associable with 88.95.1, 88.95.2, 88.95.4, 88.95.5	At least 11 sequences	**not performable**	**not performable**	**20**	**20**
88.97.A	MR CHOLANGIOGRAPHY	At least two 2D and 3D sequences	**not performable**	**not performable**	**20**	**20**
88.97.B	MR CHOLANGIOGRAPHY. With pharmacological stimulation	Baseline sequences plus at least 6 post-stimulation sequences	**not performable**	**not performable**	**30**	**30**
88.97.C	MRI OF THE DIGESTIVE TRACT WITH ORAL CONTRAST WITHOUT AND WITH VENOUS CONTRAST. Not associable with 88.95.1, 88.95.2, 88.95.4, 88.95.5	At least 13 sequences	**not performable**	**not performable**	**30**	**30**