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Produce dual-energy x-ray absorptiometry (dxa) scans for diagnostic purposes

Overview

SFHCI.M SFHCI.M This standard is concerned with the use of dual-energy X-ray absorptiometry (DXA) to produce scans that will be used for bone mass and body composition measurements and image analysis for the diagnosis of osteoporosis and sarcopenia. Production of DXA scans should be undertaken within the scope of your own role and practice. Key people are those involved in the individual's care and others involved in provision of services. Users of this standard will need to

Performance criteria

You must be able to:

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1. apply standard precautions for infection control and other appropriate health and safety measures
2. ensure all necessary preparations have been made by the individual and staff before starting the procedure
3. check and prepare the equipment required for the examination
4. ensure the environment is conducive to maintaining the privacy and dignity of the individual
5. check the identification details before commencing the procedure in accordance with national standards
6. introduce yourself and other members of staff present during the examination
7. communicate with the individual / key people to facilitate their understanding of and co-operation with the examination
8. establish the individuals capacity to understand the procedure with the help of key people if necessary
9. obtain valid consent for the procedure in accordance with national and local guidelines
10. respect the individuals privacy, dignity, beliefs and decisions
11. clearly explain the procedure and possible outcomes, including risk,

benefits and limitations
12.
check individuals of child-bearing potential for pregnancy or possible pregnancy, if appropriate to the examination, and take action in accordance with local protocols
13.
confirm the status of key people before the examination and, where their presence is required, adhering to local guidelines
14.
position the individual and adjust their clothing where required according to the protocols for the examination which allows an optimal outcome to be achieved while:
14.1 recognising the individuals need to retain their dignity and selfrespect
14.2 ensuring their comfort as far as possible
14.3 preventing the appearance of artefacts
15.
seek confirmation that the individual is ready before the exposure is made
16.
maintain communication with the individual /key people to facilitate their understanding and co-operation throughout the examination
17.
observe the individuals condition and well-being at all times and take appropriate action
18.
consider the technical aspects of the scanner set up in relation to the anatomical areas to be scanned
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19.
ensure the correct technical parameters have been chosen and assess the correct area ready for analysis
20.
on post processing of the scan, ensure all quality standards are correct, including anatomical sites and demographics
21.
following the preliminary clinical examination, inform the appropriate person if an abnormality is observed on the image which is likely to

require further investigation or treatment

22.

explain the process for obtaining results

23.

record, collate and prepare appropriate documentation, images and scan analysis for transfer or storage according to local protocols

24.

verify that the images and scan data have arrived/been stored according to local protocols

25.

recognise where help or advice is required and obtain this from appropriate sources

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Knowledge and understanding

You need to know and understand:

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1. legal, organisational and policy requirements relevant to your role, the role of others in your organisation and the activities being carried out
2. the relevant national and local standards, guidelines, policies and procedures that are available and how and when they should be accessed
3. the importance of respecting individuals culture, privacy, dignity, wishes, beliefs and decisions
4. the limitations of your own knowledge and experience and the importance of operating within your scope of practice
5. the roles and responsibilities of other team members
6. the importance of obtaining valid consent in line with national and local guidelines
7. clinical appropriateness of the examination request and the action to take when the request is not appropriate
8. the gross anatomy of the area being scanned
9. physiological and pathological processes relevant to the area being scanned
10. anatomical landmarks on the body that are relevant to DXA imaging

11.
the relevant joints in the body of the area being scanned and their movements
12.
the common relevant pathologies and normal variants of the area being scanned
13.
medical terminology relevant to the examination including abbreviations
14.
positioning terminology including abbreviations
15.
manifestations of individuals physical and emotional status
16.
production, interactions and properties of DXA images
17.
the process involved in the formation of DXA images
18.
the harmful effects of radiation to the human body and use of radiation protection equipment
19.
ways in which images can be captured, processed and permanently stored
20.
equipment capabilities and the differences in manufacturers specifications which will affect follow up scans and comparability
21.
the limitations and routine daily quality assurance processes SFHCI.M
required by the operator
22.
how to adapt communication styles, ask questions, and listen carefully in ways which are appropriate for the needs of the individual
23.
the importance of providing individuals and key people with opportunities to ask questions and increase their understanding

24.
the information that should be given to individuals before, during and on completion of the examination
25.
considerations for the individuals size, body habitus and scan modes for image optimisation, which will affect analysis of the bone mineral density values
26.
variables affecting the bone mineral density measurement and how to select appropriate scan modes for the examination and the individual as appropriate
27.
accurate positioning of the individual relevant to the area of interest
28.
the technical quality requirements of the image for precise and reliable bone mineral density measurements
29.
the recognition of artefacts, their impact and appropriate actions to mitigate or limit the effects
30.
factors which influence the decision to rescan or take supplementary images in a different scan mode or with adjusted positioning to aid diagnosis
31.
the requirements for accurate scan analysis
32.
the use of reference data and the impact of the reference database selected on the scan results
33.
the principal of least significant change in relation to follow up scan interval and subsequent statistically significant change in bone mineral density
34.
the importance of timely equipment fault recognition and local procedures for reporting these
35.

procedures relating to recording, collating and preparing appropriate documentation, images and scan analysis for transfer or storage according to local protocols

36.

how to keep full, accurate and clear records in line with organisational procedures

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External Links