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Exposure in CT – measurements of CTDI and DLP, guidelines and diagnostic reference levels

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CTDI and DLP are the fundamental dose values for computed tomography examinations. They are the basis for advanced dose calculations including size specific dose estimates (SSDE) for establishing diagnostic reference levels and can be used to optimize the scan protocols.

The basic concepts will be presented together with the assessment and optimization of the corresponding patient exposure. Local and international guidelines (AAPM) will be discussed in order to give practical hints for the use in daily routine.

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Parameters that influence image quality and dose

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With basics from lecture 1 the different scan parameters will be compared regarding their influence on patient dose and resulting image quality. In addition to tube voltage and tube current as protocol and user depended parameters also collimation/slice thickness and pitch as well as the different methods of tube current modulation and iterative reconstruction will be discussed.

After both lectures, the audience should have the necessary basic information to continue with the presentation of examples in session 2.