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(54) Title: IMAGING DEVICE AND METHOD FOR OPTIMISING IMAGE ACQUISITION

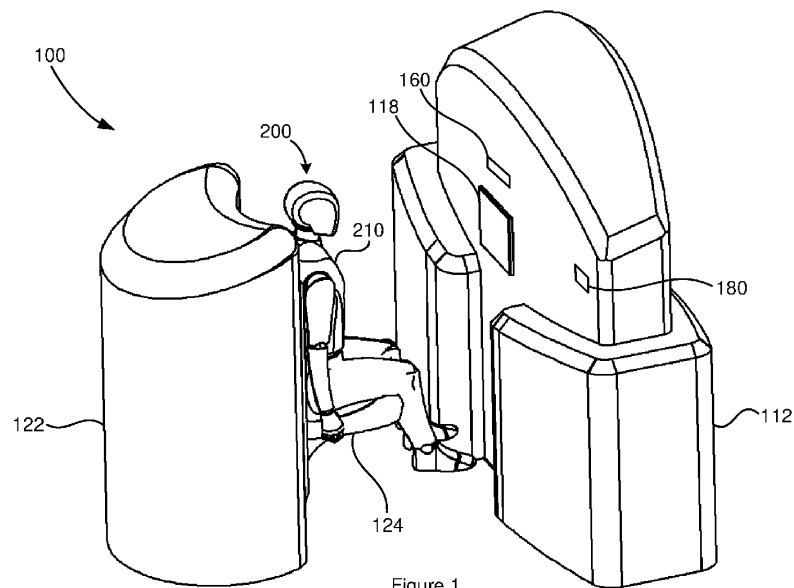


Figure 1

(57) **Abstract:** An imaging device for acquiring a time series of in vivo images of a region of a subject's body is provided. The imaging device includes at least one energy source, at least one detector for detecting energy from the at least one energy source passing through the region of the subject's body located between the energy source and detector, a controller configured to operate the at least one energy source and the at least one detector to acquire a time series of in vivo images of the region of the subject's body, at least one sensor for monitoring a physiological parameter associated with the region of the subject's body to be imaged and at least one processor configured to determine timing of the image acquisition based at least on the monitored physiological parameter. A method for acquiring a time series of in vivo images of a region of a subject's body using the imaging device is also provided.

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