MRI Quantitative Measurements

Quantitative fat measurements

Quantitative fat measurement should be included as Supplemental for FSHD. Quantitative fat measurement by MRI is increasingly being used in muscle disease as a sensitive early measure of disease progression. There are studies validating procedures in normal volunteers (Morrow, Sinclair et al. 2014), and showing sensitivity to change in limb girdle dystrophy 2I, along with a consensus statement about choice of technique (Willis, Hollingsworth et al. 2013; Willis, Hollingsworth et al. 2014). Duchenne muscular dystrophy has shown this to be reliable and sensitive to disease progression (Gaeta, Messina et al. 2012; Fischmann, Hafner et al. 2013). In FSHD there are two studies documenting a technique for making quantitative fat measurements and showing sensitivity of a select group of muscles (intermediate fat content) to disease progression over 3 months (Kan, Scheenen et al. 2009; Janssen, Voet et al. 2014). Ultimately the specific technique will depend on equipment and software at individual sites (the Dixon technique is perhaps currently the most common).