

47. Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*. 2000;55(1):68.

## **20. Appendix 1**

We will undertake two Studies Within A Trial (SWAT) to evaluate the effectiveness of an invitation letter based on the principles of Self-Determination Theory (47) on recruitment of participants to the FIREFLI study and a pen to increase response rates to postal questionnaires.

### **20.1 Recruitment SWAT**

Self-Determination Theory is a theory of human motivation, and what moves people to act. The theory outlines three core needs which facilitate self-determined (autonomous) motivation, these include autonomy (having choice), competence (feeling effectant), and relatedness (feeling connected to others). The invitation letter has been designed, with an aim to make people feel (i) they have choice and are pursuing the research because it suits one's values, (ii) they are competent to undertake the study and they could do this well, and (iii) that they feel connected to other people taking part.

Participants allocated to the intervention group will be sent an invitation letter informed by Self-Determination Theory with their trial invitation pack whilst control participants will receive the 'standard' invitation letter used within the YFU to recruit participants via the post. Participants will be randomised using block randomisation with randomly varying block sizes in a 1:1 ratio. The allocation schedule will be generated by a York Trials Unit statistician otherwise not involved in the recruitment of participants.

#### *Inclusion criteria*

Any patient identified in the FRS mail out as eligible to receive a FIREFLI trial invitation pack will be entered into the invitation letter recruitment SWAT.

### *Outcome measure*

The primary outcome will be the proportion of participants who go on to be randomised to the FIREFLI trial.

### *Secondary outcomes include:*

- a. Proportion of participants who return a screening form
- b. Proportion of participant who are eligible for randomisation
- c. Proportion of participants who remain in the trial at three months post-randomisation (defined as returning at least the first three months' worth of falls calendars from the date of randomisation)

### *Sample size*

As is usual with an embedded trial within a trial, no formal power calculation will be undertaken for the study, as the sample size will be constrained by the number of participants available to mail out to.

### *Statistical analysis*

Binary data will be compared using logistic regression.

## **20.2 Retention SWAT**

There is some evidence to suggest that including a pen with a postal follow-up questionnaire has a positive impact on response rates and number of reminders required. In theory including a pen not only facilitates its completion, but also acts as an acknowledgement of the participant's help with the study, making the recipient more likely to complete it. Participants in the FIREFLI trial will be posted a follow-up questionnaire four months post-randomisation. Participants who do not return their follow-up questionnaire within two weeks will be sent up to two reminder letters plus a copy of the questionnaire by post followed by a telephone call two weeks later.