

# What do we know about mHealth interventions and just-in-time adaptive interventions (JITAs) to promote physical activity?

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## BACKGROUND

Health professionals are expected to give physical activity advice, but often lack time and skills for supporting behaviour change.

Behaviour change support delivered through mobile devices such as smartphones (text messages and apps) and tablets, so-called mHealth interventions, may reduce pressures on the NHS and health professionals. They are interactive and can help people become more active as they go about their daily lives.



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## WHAT DID WE DO?

We did a broad review ('scoping review') of the literature to find out what is known about mHealth interventions which aim to promote physical activity.

We also did a systematic review of the literature into a new technology called 'just-in-time adaptive interventions (JITAs)'.

## WHAT ARE mHEALTH INTERVENTIONS?

mHealth interventions are delivered through mobile devices such as mobile phones, smartphones and tablets. They include smartphone apps and text messages. Smartphone apps can be downloaded from non-commercial sites, such as the NHS Digital Apps Library, and commercial platforms such as Google Play or App store. They can be free of charge or downloadable for a fee.

## WHAT IS A JITAI?

A JITAI is a smartphone app which provides support 'just-in-time': the right type (or amount) of support, at the right time, whilst eliminating support that is not beneficial. For instance, people receive an alert to take a break when they have been sitting for 30 minutes, or are encouraged to go for a walk when the weather is fine and it is lunchtime. JITAIs use data from built-in sensors or apps such as accelerometers to work out when to send support.

## WHAT DID THE EVIDENCE TELL US?

*mHealth interventions* are more effective than usual care at reducing sedentary behaviours, and equally effective as usual care at helping people become more physically active. We know little about their effectiveness and cost-effectiveness in the long term, or how they can be integrated in health and care settings.

Research into *JITAI*s is in its infancy. We don't know whether they are effective or cost-effective, how many people would take them up and continue to use them over time, their influence on health inequalities, and their effective components.

## WHAT SHOULD DECISION MAKERS AND HEALTH PROFESSIONALS DO?

We recommend that decision makers commission mHealth interventions for physical activity promotion when research evidence shows that they increase physical activity or reduce sedentary behaviour, and if such evidence is not available, that they incorporate evaluation in the commissioning process. We also recommend that decision makers are cautious in commissioning JITAIs for use in the NHS until more is known about their effectiveness and cost-effectiveness.

Health professionals can signpost patients to mHealth interventions for physical activity promotion which have been commissioned or are available on the NHS Digital Apps Library, such as the "Active 10 walking tracker".



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**Key references:** Conference presentation about our JITAI review: [www.ucl.ac.uk/behaviour-change/events/conf-18/presentations/7.A.1.pdf](http://www.ucl.ac.uk/behaviour-change/events/conf-18/presentations/7.A.1.pdf). Nahum-Shani et al, Annals of Behavioral Medicine 2016; Direito et al, Annals of Behavioral Medicine 2017; Hakala et al, Journal of Rehabilitation Medicine 2017; Mateo et al, Journal of Medical Internet Research 2015; Stephenson et al, Int Journal of Behavioral Nutrition and Physical Activity 2017; Muller et al, Int Journal of Behavioral Nutrition and Physical Activity 2016; Blackman et al, Journal of Medical Internet Research 2013.

**Funding:** Julie Houghton and Dr Kathleen Lane were supported by Research Capability Funding, administered by the Norfolk and Suffolk Primary and Community Care Research Office on behalf of the Norfolk and Waveney Clinical Commissioning Groups.