# Supplementary file 1. Summary of relevant findings from scoping review[1]

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| **Current practice** |
| • Healthcare professionals view physical activity as an important part of clinical care [2–5].<br>• Healthcare professionals frequently lack knowledge and skills around physical activity and behavioural change counselling [3,6–8] reflecting historically inadequate training and education [9–15]<br>• Healthcare professionals with low confidence in behaviour change skills seldom talk about physical activity, missing most of the opportunities they identify [4,7,16–18] often avoiding them for fear of offending people [3,17,19,20]<br>• Physically active healthcare professionals talk more frequently and effectively about physical activity [6,16,17,19]<br>• Many healthcare professionals resort to communication styles that make people less likely to become active and engage with support [4]<br>• Physical activity conversations are observed less frequently with lower socioeconomic groups, non-white ethnic groups, and those without private health insurance in countries without state-delivered healthcare [3,21,22] |
| **Patient perspective** |
| • The majority of people attending healthcare are interested in physical activity and welcome conversations [16]<br>• Patients value integrated multidisciplinary support, the use of common language and consistent messaging [19,23,24]<br>• Patients recommend healthcare professionals avoid a 'preaching' style of conversation or give unsolicited advice to reduce defensive responses [19,25,26]<br>• Patient initiation promotes more frequent conversations on physical activity and increases exploration of individual values and agendas.[26]<br>• Being non-judgemental and spending time to build confidence are skills that patients value [19,27] |
| **Training considerations** |
| • Time is the primary barrier to conversations on physical activity [3,5,7,16,17,28]<br>• Lack of training on behaviour change skills is a more prevalent barrier for healthcare professionals than knowledge around physical activity and disease [3,7,17,19,28]<br>• Healthcare professionals are typically trained to provide information and direction rather than to establish collaborative relationships with patients [25]<br>• Traditional training and engrained consulting models make it hard for clinicians to change their consultation approach [29]<br>• Healthcare professionals value counselling strategies such as motivational interviewing, but many have reservations that they too complicated and time consuming [29,30]<br>• Well-designed post-graduate education on physical activity is well received by healthcare professionals and can be transformative in the way they approach conversations.[30,31]<br>• Professional leaders, personal contacts and partnerships with professional bodies improve engagement in education programmes [16,32] |
| **Conversational structure** |

- A flexible approach addressing knowledge and skill deficits and balancing physical activity conversations with other clinical objectives is of fundamental importance [7]
- A range of conceptual frameworks exists to support physical activity conversations. It remains unclear what is most effective or the best fit for clinical practice[33–38]
- Reported approaches include motivational interviewing, physical activity screening tools, behaviour change techniques, multimodal approaches and consultation constructs such as the '5As' strategy [30,32,39–41]
- Motivational interviewing is an effective and increasingly popular framework to support the development of self-efficacy and patient-led behavioural change in clinical practice [42–44]
- Screening tools can provide useful prompts for physical activity and can help systems capture physical activity data [16,39,45]

**Clinical practice**

- Prompt strategies can be useful for both healthcare professionals and patients [3,26,46,47]
- Patients and clinicians value information booklets, workbooks and practical instructions to support consultation [3,30,39,41,46]
- Walking interventions and motivational support appear to be the most efficacious and time-efficient interventions [30,43,47–52]
- Integration of physical activity counsellors into care pathways can help save clinical time, impart physical activity and health knowledge that healthcare professionals may not have, and deliver good quality behavioural change support [24,53,54]
- Healthcare professionals using frameworks such as 5 As and FRAMES generally focus on Assess and Advise stages, delivering premature, clinician-driven plans. This approach omits key steps for long term behavioural change, such as building self-efficacy and confidence [2,26,27,55]
- The confidence around the risks of physical activity is low for both healthcare professionals and people living with health conditions [27,56,57]

**Designing pathways**

- Keeping workload low and considering time implications is critical for acceptability amongst healthcare professionals [16,20,45,58] so interventions should integrate with existing care pathways [7,50]
- Straightforward, time-efficient protocols are well received and may be vital for supporting healthcare professionals with limited skills and experience [3,16,46,59,60]
- Care pathways benefit from simplicity and intersectoral cooperation [30,54,61]
- Healthcare professionals need their role in physical activity pathways clarified [7,17,54]

**System considerations**

- Blanket physical activity promotion and over-reliance on the impact of individual practitioner advice (particularly physicians) are ineffective strategies when employed in isolation [25,27,53]
- Strategic and organisationally driven approaches are essential to achieve an extensive cultural shift in healthcare [3,62,63]
- System reimbursement is essential, driving adequate resourcing and powerfully impacting healthcare professional behaviour [3,20,64]
- Interventions costing less than £30,000 per Quality of Life Year (QALY) are considered cost-effective to commission. NICE estimate that the cost of a QALY through a brief physical activity conversation is between £20 and £440, making it a highly cost-effective intervention compared to usual care [21,25,35,49,51,65–67]

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