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Let's get physical: considering and overcoming the barriers to physical activity in CKD

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Being physically active is associated with important health benefits and is a key non-pharmacological intervention to reduce the risk of developing chronic conditions, including cancer, cardiovascular disease (CVD), depression and diabetes mellitus. Being physically active plays a major role in primary and secondary prevention of CVD and improves life expectancy even in those with multiple health conditions (1).

Chronic kidney disease (CKD) affects more than 800 million people worldwide and associates with reduced life expectancy, particularly from CVD. CKD is consistently linked with reduced physical function and poorer quality of life (2). People with CKD are typically less active than the general population and are increasingly likely to be sedentary with increasing severity of disease (3–5). Kidney Disease: Improving Global Outcomes (KDIGO) recommends that patients with CKD should undertake moderate physical activity for 30 minutes on most days of the week (6). The 2022 UK Kidney Association guideline for exercise and lifestyle in CKD provides detailed strategies to improve physical activity across all CKD to address these high levels of physical inactivity (7). Despite the availability of these guidelines and recommendations, there is a high prevalence (66-89%) of self-reported physical inactivity in CKD (3,7).

Several studies consider physical activity and exercise training in patients with end stage kidney disease, but there is a relative paucity of evidence in non-dialysis CKD. Observational studies show a correlation between increased physical activity and improved outcomes, but this does not prove causality. There is a lack of randomised control trial data: whilst there is no evidence that increasing physical activity is dangerous, there are no trials powered to assess the effects of physical activity on mortality in non-dialysis CKD (7). Moreover, synthesising trial data is difficult due to the heterogenous way in which physical activity and physical function are assessed and reported. Indeed, whilst there is consensus that physical activity is important for patients with CKD, assessment of physical function and physical activity advice are rarely part of routine CKD care (7,8).

Accepting that being physically active is not possible for all, why is it so difficult for clinicians to assess physical activity and incorporate physical activity and lifestyle advice into standard CKD care? Figure 1.

1. **Terminology.** It is crucial to differentiate between daily physical activity which describes any activity performed throughout the day involving movement (e.g. housework, walking between rooms) from exercise. There are no specific fitness goals with daily physical activity whereas exercise is a specific type of physical activity – it is structured, repetitive and aims to improve or maintain physical fitness (9). Understanding the difference is as important for healthcare practitioners as for patients.

2. **Disconnect.** There is a disconnect between healthcare practitioner and patient perceptions of definitions of physical activity, barriers to physical activity and interventions which may be effective. Qualitative studies considering these themes have been incompletely explored.
3. **Implementation barriers.** Healthcare practitioners have difficulties promoting and implementing physical activity / lifestyle measures for many reasons including deficiencies in knowledge, training and lack of time and resource (8).
4. **Assessment.** There are several methods to assess physical function but no standardised approach; some (e.g., cardiopulmonary exercise testing) are impractical in the clinic setting. Others (e.g., self-reporting) are pragmatic, simple to complete and provide a 'real world' method of assessment, enabling goal setting to improve physical activity level (3); but are subject to significant bias.
5. **Overly complex interventions.** Exercise training and prescriptive activity regimens may be viewed by patients as too intense and off-putting for a population known to be sedentary. This may explain poor adherence and high withdrawal rates seen in recent studies (10).
6. **Sustained change.** If the aim is for a long-term, lifestyle change to being less sedentary, then the intervention needs to be sustainable and co-developed with patients with CKD. Whilst with some interventions there is evidence of improvement in quality of life and other measures there is no evidence that this is sustained over the longer term with studies tending to report only short-term outcomes (3).

How should these be addressed?

Physical activity is simple, free and potentially widely accessible. In the current era of austerity this is appealing: at a societal level, there are likely to be significant cost savings by improving physical activity levels (11), but non-pharmacological lifestyle assessment and intervention needs to be prioritised *and prescribed* alongside pharmacological therapies. The campaign to end 'pyjama (PJ) paralysis' whereby some patients in hospital becoming unnecessarily deconditioned gained significant publicity (12). What about 'PJ paralysis' occurring in the home environment?

'Some physical activity is better than none' (7)

Engagement of both patients and healthcare practitioners is essential. Discussion with patients highlights that physical activity is an aspect of care which patients do not feel is covered at clinic or dialysis sessions. There is uncertainty about what they can do to be more active but a certainty that they would like physical activity included as part of their care plan (13). Education of both patients and healthcare practitioners covering terminology and the wider benefits of physical activity is therefore essential. Encouraging conversations with CKD patients at clinics is key and assessment of physical function needs to become part of routine care. Knowing that physical activity is simply increased movement might be enough to motivate many; others may need an activity prescription. The possibilities are numerous: increasing daily step counts; moving between rooms; standing for longer than usual; walking outside; stretching or dedicated chair-based activity. Patients should also be directed to written/online/oral resources (14–17)

Undoubtedly, there is a cohort of patients who want to be active, but who currently are not. Uncertainty about what advice to offer is clearly a barrier, but this need not be the case. Common sense should prevail, and unless there is a clear contraindication (18) patients can continue to lift weights, cycle or run, or be active in any way they choose or are able.

Therapeutic nihilism has long been a barrier for patients with CKD, it is unhelpful to also subject them to lifestyle nihilism. The UK Clinical Practice guideline is the first to set out, pragmatically and in detail, physical activity targets for all patients living with CKD and affords the opportunity for healthcare practitioners to start actively prescribing individualised physical activity (7).

CONFLICT OF INTEREST STATEMENT

None declared.

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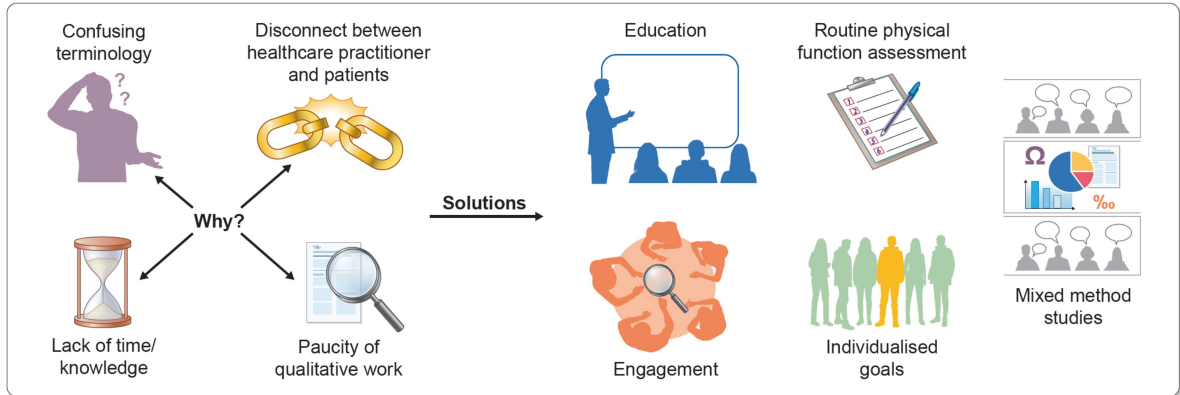
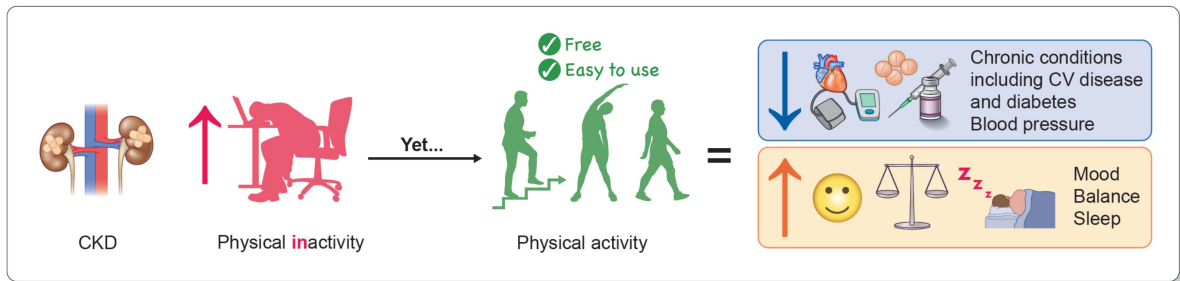


Figure 1: Benefits of physical activity in the general population, barriers to implementing physical activity as a management strategy in CKD and ways to address this.