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PATELLOFEMORAL SUBGROUPS, A LOW COST CLINICAL APPROACH WITH A SURPRISE OR TWO!

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Identification of subgroups within the patellofemoral pain (PFP) population has gained a lot of interest and attention from the research community in recent years due to the recognition of the relatively poor patient outcomes associated with the traditional multimodal approach. This presentation summarises the results of the Targeted Interventions for Patellofemoral Pain (TIPPs) programme of research that has led to the development of a robust simple hierarchical algorithm. The TIPPs algorithm uses objective data generated by six low cost clinical tests to categorise patients into one of three subgroups: a) strong (22% of participants); b) weak and tight (39% of participants); c) weak and pronated (39% of participants). To many in the field, the emergence of the two weak groups was not a great surprise and these two weak subgroups are consistent with contemporary thinking on the causes and subsequent management of PFP. However, the strong subgroup was a surprise and is a novel previously unrecognised group that falls outside the current treatment recommendations, as no weakness in muscle strength or shortening in muscle length was identified in this group of PFP sufferers. The people in the strong subgroup also reported higher levels of function and quality-of-life compared with the other two subgroups. It is currently our hypothesis that this group may be overloading their patellofemoral joint due to reduced motor control. We speculate whether proprioceptive and neuromuscular retraining should be the focus of any future rehabilitation strategy for this subgroup of patients, rather than strengthening exercises. It would seem illogical and potentially detrimental, due to possible overload/overuse of an already painful joint, to offer this subgroup of patients strengthening exercises. Indeed this may be one of the key factors leading to the current high failure rate of the multimodal approach as virtually all PFP patients are prescribed quadriceps strengthening exercises as a standard component of their rehabilitation, increasingly this is also in combination with hip strengthening. Due to the low cost nature of the clinical tests employed, the TIPPs approach has high clinical utility. This makes it potentially viable for widespread future roll out into primary care and physiotherapy clinics internationally. Further work to support the clinical roll out has led to the development of Appatella, which is a mobile and tablet app. https://digitallabs.mmu.ac.uk/what-we-do/products/appatella/. Appatella has three components: i) the TIPPs algorithm for clinicians to subgroup patients, ii) videos, outcome measures and diary functions to guide patients through their rehabilitation programme, iii) an online GDPR compliant remote searchable relational database which over time will build into a key resource providing 'Big Data'. However, despite some preliminary positive data (unpublished) to date no definitive RCTs have so far been conducted currently therefore it is still unknown if targeted treatment directed at the three subgroups will actually lead to improved patient outcomes. Future research should investigate the prognostic implications of these subgroups and establish the level of efficacy of targeted intervention.

KEYWORDS: Patellofemoral, rehabilitation, strengthening.