

Research into Paediatric and Adolescent Patellofemoral Stability

Dislocating kneecaps are a relatively common problem in the adolescent and paediatric population. The problem can be debilitating for many young and otherwise fit and healthy children who should be pursuing sporting interests and enjoying a healthy lifestyle. Dr Sheanna Maine has commenced research into this population of patients in conjunction with Griffith University.

“Children can be susceptible to this condition for a variety of reasons”, Dr Maine says. “The majority of patients I see, have a traumatic dislocation of their knee cap from a rugby tackle or other contact sport. There are some patients who also have underlying anatomical features that predispose them to further dislocations. These patients generally do not do well with physio and have ongoing problems with apprehension and recurrent subluxation or redislocation. These are the patients we are really interested in.”

Current surgical treatment options for patellofemoral instability include both bony and soft tissue surgery. It is important to identify the anatomical structures that contribute to the dislocation event and change them if we are able to. Once we have optimized the patient’s biomechanics, I cannot emphasise the need for appropriate rehabilitation enough. As this is the only real element that our patients have control over, it is important to empower them to take control of their condition and encourage compliance. This is not always easy in teenagers!

Our aim is eventually to quantify the forces through the patellofemoral joint by improving our understanding of the anatomy and biomechanics of the lower limb. We aim to amalgamate MRI scans, Gait lab data as well as electrophysiological studies to create a virtual individualized lower limb model for the patient. Once this has been done, we can then perform virtual surgery in the form of osteotomies, ligament reconstructions or whatever anatomical change we desire in order to assess the outcome on patellofemoral tracking. We would very much appreciate any patient with an acute or recurrent patella dislocation being involved either through Redcliffe Hospital, the LCCH or via my private rooms.

Dr Maine has developed a Private Practice with interests in Adult lower limb surgery as well as Paediatric Orthopaedics. She works at Peninsula Private Hospital in Kippa Ring, as well as North West Private in Everton Pk. My interests in lower limb surgery as well as paediatric orthopaedics stem from my delight in seeing children as well as my elderly patients benefit from an understanding of their bodies and achieve a better appreciation of what they are capable of.” Dr Maine’s other interest is in lower limb reconstruction and deformity correction surgery. “This field offers some of the greatest opportunities to improve a person’s function and quality of life. Dr Maine has undertaken two orthopaedic Outreach trips to Kiribati with the RACS Pacific Islands Program. I love the challenge of orthopaedic surgery in this extremely remote environment. You can really make a difference to children and adults alike, however it is also extremely humbling as there are many cases for which we can do nothing.”