**Transcript**

***Associate Professor Rod Green – Function of hip stabiliser muscles in hip osteoarthritis***

The project that I want to talk to you about today is one that we’ve been looking at for a number of years, earlier on at the Bundoora campus but now at the Bendigo campus and it relates to the muscles that stabilise the hip joint. To give this some context we have probably 20,000 people in Australia every year that have a hip replacement and there are many tens of thousands more that are actually in pain and have disability related to osteoarthritis of the hip. And, our hypothesis is that there’s a couple of key muscles in particular, that are very much related to the disability that these people suffer. The two muscles that we’re particularly interested in, they’re call the gluteus medius and minimus. They’re both around the hip joint and they’re interesting muscles in that they’re fan-shaped and because of that fan shape the fibres over here may be quite different in function to the fibres over there. And, one of the things about these muscles is that they’re relatively deep in the hip joint and that means that we’ve actually got very little evidence about what they actually do. And, even less evidence about what they do in people with hip osteoarthritis. So, we’re, we’ve been as I said looking at this project for a number of years and recently we’ve just had a publication that is evidence that we’re the first group in the world to have actually been able to put needle electrodes into each of these different segments of both muscles and be able to record signals from those muscles so that we’re now able to take this project forward with a group of people with hip osteoarthritis and have a look at the function of these muscles in that population.

Ok, so what we, the outcome we want to achieve with this group is that we want to look at the function of these muscles now that we know we can get signals from them. We want to look at what these muscles are doing in these people that are suffering from osteoarthritis and look at them just in ordinary everyday activities so we can see whether particular segments of the muscle are actually doing particular things at different times. So, for instance, the sort of activities these people have difficulty with are just generally walking, going up and down stairs, standing up and sitting down in a chair, all of those normal, everyday things that most of us take for granted. So, the evidence that we’ve got from our previous studies so far are that some of these muscle segments are more important than others in some of these activities. So, if we can have a look at our patients with osteoarthritis and determine the function of these different segments, both before they have surgery and also after surgery we’re going to be to see which segments are the most important for these people and which ones may be damaged or losing function either before and after surgery. So, that will be our key outcomes.

Okay, so once we know what deficits these people suffer from, that is which particular segments may not be working effectively or which segments are perhaps reduced in size, that is they’re atrophied in these particular populations then we can actually set up programs that will actually be designed specifically to recruit those particular segments of the muscle. And again using our intramuscular electromyography which is the technique we use we can then look at particular rehabilitation programs and in doing this we’re working with a group of, I’m a clinical anatomist, we’ve got orthopaedic surgeons, we’ve got musculoskeletal physiotherapists, so a range of people here at the Bendigo campus who are all going to be involved in either the surgery or the rehabilitation programs. And, by knowing what the problems are with these patients we can design programs that should improve their function and again using the same techniques have a look at them before and after those programs so see whether they’re in fact improving their function. And, I guess for people who have got hip osteoarthritis it might mean that if we can develop a program that will improve function it might delay the time until they have surgery or for people that have reached that point where they have to have surgery they may get better outcomes from that surgery based on the sort of results that we’re going to find.