When your knee has been severely damaged by arthritis or injury, performing the most basic and simple movements like walking or climbing stairs can be very painful.

What most people do when they see their doctor is work on non-surgical options first, like pain relieving medication, physical therapy and the use of walking aids like a knee support. However, when these methods don’t work, you may need a knee-replacement surgery to effectively reduce the pain, correct the leg deformity and help you regain normal activities.

Knee replacement surgery has become such a common operation these days that many of us would know of a friend or relative who had undergone such an operation.

Knee replacement surgery was first performed in the late 1960s. To date, this operation has become one of the most successful surgical procedures performed. Over time, technology has also helped in improving surgical outcome.

As such, Gleneagles Kuala Lumpur is proud to welcome Dr. Tom Vann (Vanniasingham), a Consultant Orthopaedic Surgeon who has an interest in Shoulder, Hip and Knee surgery, with his area of sub-specialty interest being Computer Navigated Knee surgery.

Dr. Vann received his early education here in Kuala Lumpur at St John’s Institution before gaining entry to medical school at University College Dublin. He initially trained at the Mater Misericordiae Hospital, Dublin. Dr. Vann underwent basic surgical training at the Royal Berkshire Hospital, Reading before completing postgraduate orthopaedic training in London. He has attended numerous courses and fellowships throughout the United Kingdom, Europe and U.S.A. Dr. Vann has contributed to several publications and has over 20 years of orthopaedic experience. He has returned home with the support of his wife, Geraldine and daughter Genevieve to look after his elderly parents.

“The computer allows you to take into account soft tissue imbalance and preexisting structural deformity and gives guidance for the perfect cut,” says Dr. Vann.

Computer navigated knee surgery combines the power of the computer with the craft of surgery.

“This ensures the perfect cut, making the patient’s chances for recovery better,” says Dr. Vann.

With computer navigation, relying on the surgeon’s eye and jigs no longer is necessary as the computer gives a 3D configuration of each individual knee enabling the surgeon to define the optimal plane of resection prior to actually making the bone cut, thereby ensuring the optimal cut and subsequent implantation of prosthesis is perfect each and every time.

Normally, the hip, the ankle and the knee are all in one, straight line. It’s called the load-bearing line.

“Artificial joints implanted more than three degrees outside of the normal mechanical load bearing axis are liable to fail”, so said John Insall, a doyen in the field of orthopaedics many years ago. Malalignment leads to early failure.

Conventionally, when the cuts are made, surgeons use jigs and assess with the naked eye what is the correct plane to cut in. It is successful in the short term, but it will not go to the full 15 years. It might go to five years but it is unlikely to go 10-15 years.

According to Dr. Vann, computer navigation helps eliminate many of these inaccuracies. The results of computer navigation have been very well documented.

Navigation gives greater accuracy in alignment and this correlates with better function and implant longevity. Navigation reduces revision rates and blood loss. Navigation is teachable.

Dr. Vann should know because he had the opportunity to experience this first-hand during his time in Scotland.

“Most surgeons have not taken to it (computer navigation). I myself resisted for four years,” he says.

“Computer navigation then was something new. I had been doing knee surgery the conventional way and my outcomes were good and then I had the occasion to work in a very remote part of Scotland. I had a very dear friend who worked in the industry and he had been telling about navigation for a while. He invited me to see what he was doing. Mind you, this was not Kuala Lumpur or London where patients present at an early stage of the disease process.

“These people were coming in the very advanced stages of the disease process, such that they had great deformity and the surgeons who were working there were getting poor results until navigation was introduced”. “And then almost overnight, the most horrendous knees were being done perfectly. Every day, day in day out, the patients recovered well. All because the surgeons found that this system allowed them to get the perfect result each time.

“I was fortunate to be there at that time. And I was sold on that.”

Dr. Vann also says there is a steep learning curve on embracing this technology.
“There are several systems around,” he says. “I went through all of them and found the best. It is a generic system, the software and hardware are perfect match. The software has gone though many updates over the years and is currently on what I can best describe as “Windows 8”

“The other computer systems were like using an iPad with Microsoft software and their software systems had not been updated with time, it was only then that I realised why other surgeons were put off. They were using the wrong systems.” There were also some systems where the hospital was expected to buy the hardware and software and this was too costly. More recently, patient specific instrumentation has come in to the news but evidence from the American Academy of Orthopaedic Surgeons meeting in 2012 has questioned its benefit and cost.

“With computer navigation you get the perfect cut, you get the perfect balance and perfect results.”

An implant is an artificial surface to replace the wounded or diseased arthritic knee bone that essentially consists of two metal bearing surfaces that are cemented to bone that are separated and cushioned by a plastic spacer between.

According to Dr. Vann, the survival of knee implants is superior with navigated surgery. There are over 300 articles that document this.

“A knee implant is not God given,” he says. It has a life limit of about 15 years, if put in optimally. However, there are many factors that affect its longevity – like if it is put in in the optimal position or if the patient is more active and heavy, they put greater stresses on the knee joints.

If you are approaching 60 and you can’t do many of the things you normally do, your sleep is affected, your quality of life decreased, walking distance is reduced, lifestyle is curtailed and you are having to take regular painkillers, it is time to consider surgery.

These days, patients are getting crippled at a younger age because of the activities they do, so we are doing them younger. However, if you put it in the perfect position and the perfect alignment, the chances of a revision is less.

This is the end stage of the arthritic process and is painful where the only option for the patient is a knee replacement and there’s no other solution for it.

If you navigate, and you navigate with the right system, you are giving the patient 101 percent every time. And there’s no guesswork about it. You know that before the patient comes off the table.

From a surgeons’ perspective “What navigation does is it makes the inexperienced surgeon safer and the experienced surgeon extraordinary.”

Time and technology has moved on.

Dr. Vann commenced practice in Gleneagles Kuala Lumpur in March 2013. He was previously Consultant Trauma and Orthopaedic Surgeon at the Royal London and St Bartholomew’s Hospital in London, United Kingdom.