Guided Personalized Surgery (GPS): The Next Generation in Navigation Technology for Shoulder Replacement

Shoulder replacement is a complex surgery that requires an in depth understanding of the 3 dimensional shape of the shoulder blade and how bone wear from arthritis can affect this. It is essential during the replacement process that normal anatomical relationships are restored and that implants achieve maximal stability and fixation in the bone. To achieve these goals in cases of severe arthritis can be challenging even for very experienced shoulder surgeons due to limited visibility during surgery. Appreciating 3 dimensional relationships, wear patterns and how they relate to remaining bone support requires X-ray vision which is not possible during this procedure.

GPS gives surgeons this 3 dimensional view and allows the surgeon to plan the exact placement of the appropriate implants before entering the operating room. Using a camera, tracking device and CT scan, surgeons can now use intelligent instruments to exactly position the chosen implants in the optimal orientation to restore anatomy while achieving stable, durable fixation. This is the most advanced surgical navigation tool available to shoulder surgeons and it has revolutionized shoulder replacement by greatly improving the accuracy of shoulder replacement making each step one of precision.

Dr. Parsons was among 8 surgeons who helped develop and launch this technology. The team includes surgeons from around the US and Europe as well as engineers working in combination to provide solutions that augment surgeons' skills at performing this operation. This technology has been used as far away as Australia. Dr. Parsons continues to work with this pioneering team in perfecting the capability and accuracy of this technology. This includes published research and presentations at national meetings about the merits of surgical navigation in shoulder replacement.

To find out more information about the benefits of GPS and who it works, visit Dr. Parsons' presentation.