PERCUTANEOUS LASER DISC DECOMPRESSION (also known as PLDD following the technique by PROFESSOR DANIEL S.J. CHOY). I GIVE THE FOLLOWING INFORMATION LETTER TO THE PATIENT AFTER OUR CONVERSATION / VISIT CONSULTATION EXPLAINING DEEPLY THE SAME INFORMATIONS.

PLDD does not solve all protrusion/herniated disc cases so we cannot suggest it as "the magic wand" for this pathology. On the other hand there is no treatment / intervention that settles 100% of the cases of protrusion / herniated disc and forever. During the conversation and visit consultation with Mr. Gian Paolo Tassi, we have deeply discussed the alternative treatments options like "traditional" surgery for disk hernia (orthopaedic and neurosurgical) and endoscopic herniectomy. The statistical analysis of both international and personal results of PLDD by Dr. Gian Paolo Tassi (comprising over 3500 cases treated up to September 2013) provides positive results in 85% of cases, with 4% of relapses and 0 , 1% (1 in 1000 cases) complications (basically discitis, infection of the herniated intervertebral disc that has been treated with PLDD). This complication occurs between the 3rd and 45th day, despite optimal antibiotic therapy performed before, during and after the treatment. The discitis can be cured without consequences using specific antibiotics for 4-6 weeks, resting or, in exceptional cases, with a new surgery very similar to that one used for the herniated discs. If there is the suspect of discitis, the patient must have a new MRI, blood analysis (mainly C-reactive protein – **CRP** – erythrocyte sedimentation rate – **ESR** – and white blood cells) and infectious disease specialist consultation. The symptoms of discitis are various (back pain in 86%, fever in 35-60%, loss of radicular sensibility, leg pain). Very often patients, as well as many health professionals, don't know the PLDD or confuse it with other mini-invasive treatments (ozone therapy, nucleoplasty, IDET, surface laser) which have nothing to do with PLDD in terms of scientific background and physical process. PLDD has its own procedural and technical specificity that requires long preparation of the surgeon before being clinically applied on patients. It really is a mini invasive surgery using a very fine needle which, under local anaesthesia (not to be confused with spinal or peridural anaesthesia), is introduced under radiological control until the centre of the intervertebral disc (nucleus pulposus). The nucleus pulposus (gel-like consistency) or rather the migration of a part towards the periphery of the intervertebral disc forms the "lump" (called herniation or protrusion when it is smaller in size) that will compress the nerve root, source of the pain suffered by the patient. Therefore, the needle is designed to achieve precisely the point where the herniated disc originates. At this point we introduce the laser optical fibre into the soul of the small needle (as thin as a human hair) and the tip of it will be placed right in the nucleus pulpous. The pain that you may experience during this stage is minimal and more than acceptable (and, in any case, it only lasts 3-5 seconds). It then starts to deliver the laser energy (heat) that needs to be individualized from patient to patient depending on several parameters that the operator must consider. This laser energy in the nucleus pulposus produces the vaporization of a very small amount of it but, in 85% of cases, enough to obtain a reduction of localized pressure at that point that determines – for a physical law of "pressure gradients" – the deflation of the herniation/protrusion and then its detachment from the nerve root. In most cases this "deflation" is minimal, but enough to get a nerve decompression (scientific studies have shown that simply creating a space of 100 angstroms for the nerve it will decompress. 100 angstroms correspond to 1/10 of a millimetre!!!). From this concept we deduce that the objective of PLDD is not the "disappearance-disintegration-burning" of the hernia, but its minimum reduction though. However, keep in mind that data from scientific studies on PLDD Prof. Daniel Choy made show that 30% of herniae/protrusions can completely reabsorb. After the delivery of laser energy we unthread the needle and put a plaster that will be removed after 3 days without treatments. The patient will have to stay in bed for 3-4 hours (you can eat, drink, lie on the right/left side or move your legs and raise the backrest of the bed up to 30 degrees) and

then he/she will be able to stand up to go to the toilet only for 5 minutes, 2-3 times in the next 12 hours. The next day he could stand up 5-6 times for 10 minutes each time. On the 3rd day 10 times for 15 minutes each time, and so on for 10 days. For 4-5 days the patient should avoid as much as possible to sit and for 7-8 days will not have to use the car (both driving or as a passenger). The journey back home can obviously be done by car but lying down (maybe not quite to 180 degrees) and stopping – if the journey is long – every 100/150 miles to get up and have a 5-minute walk each time. It will be good to wear a simple lumbar compression garment (such as criss-cross type) for 15 days. After that period, it should be worn only for long trips by car or in particularly stressful days. It must not be worn lying in bed! You can wear it on the way back home when lying in the car. You can climb the stairs (even 20-30 steps) once on the day after PLDD, twice 3-4 days later, 3-4 times 7-8 days later. The concept of "GRADUALNESS" must cover all aspects of daily life for 15-20 days. For actions like having a shower (that means standing without the corset) it is better to wait for 5-7 days. The patient can return to his work not earlier than 15 days after the surgery, but this depends on the kind of work that is carried out (it varies from 15 to 45 days). Patients should refrain from sexual activity for 10 days and if he/she suffers from constipation use laxatives for 15-20 days. It is good to "abort" severe coughing or sneezing. The patient must keep from labours **ALWAYS AND ANYWAY** (do not lift weights heavier than 10 kg especially if continuing), activities with jumps, chest bending or twisting (almost any sport activity is one of the causes of hernia/disc protrusion), overweight. Compared to traditional surgical treatments, the great advantage of PLDD lies not only in its mini invasive character, but also in the absence of blunt dissection of muscles, milling of bones, ligaments opening, formation of perinerve adhesions, weakening of the spine and the use of local anaesthesia. Note also that 15% of patients that do not have positive results with PLDD may undergo the traditional surgery that can be perfectly performed. With PLDD this is not always true. A patient undergoing traditional surgery for hernia may not always undergo a PLDD. In 10% of cases it is not possible to penetrate the intervertebral disc L5-S1 because of a high iliac crest that can only be observed during the procedure and not before it. **THE RESOLUTION OF PAINFUL SYMPTOMS AND THE JUDGMENT ON THE RESULT OF PLDD WILL NOT BE GIVEN BEFORE 4-7 WEEKS. IN THAT PERIOD IT IS FREQUENT TO HAVE STILL PAIN AS IN THE PAST, NEW TYPES OF PAIN, "UPS AND DOWNS". ANYWAY, PATIENTS COULD TAKE PAINKILLERS OR ANTI-INFLAMMATORIES (WHATEVER THE PATIENT CONSIDERS TO BE MORE EFFECTIVE AND BETTER TOLLERATES) IN AGREEMENT WITH THE FAMILY DOCTOR** (even cortisone, when not contra-indicated as in diabetes or glaucoma, Betametasone 4 mg in intramuscular vials 1 a day for 5 - 6 days). **The patient will have small and progressive betterment within 10 months following the PLDD. HOWEVER, IF THE PATIENT HAVE STILL PAIN AFTER 4 WEEKS OR MORE PAIN THAN BEFORE THE PLDD AFTER 4 WEEKS HE/SHE MUST HAVE A NEW MRI, BLOOD ANALYSIS (CRP, ESR, WHITE BLOOD CELLS) AND INFECTIOUS DISEASE SPECIALIST CONSULTATION.** If the patient focuses on daily walks and maybe a bit of cycling or stationary bicycle, IT WILL NOT BE NECESSARY TO RUN CYCLES OF POSTURAL TRAINING. IN MY PERSONAL EXPERIENCE 10-15% OF PATIENTS HAVE WORSENINGS OR EVEN RELAPSES WITH THESE ACTIVITIES '(even if run by talented and well-trained operators) INDEED. Swimming depends on an individual sensibility: 10% of patients may experience painful relapses. However, swimming is not good for patients suffering from cervical. In any case, swimming should be for 2/3 backstroke and 1/3 crawl avoiding any other style. The follow-up are scheduled after 10 days, 1 month, 6 months. These follow-up will be done with Mr. Gian Paolo Tassi or with other designed colleague of Mr. Gian Paolo Tassi. **PLEASE, MAKE A COPY OF THIS ONE WITH SIGNATURE, DATE, AND GIVE IT TOGHETER THE INFORMED CONSENT FILLED BEFORE THE PLDD PROCEDURE.**

DATE, SIGNATURE