# DISORDER: SEGMENTAL INSTABILITY OF THE LUMBAR SPINE (Instability, Stenosis)

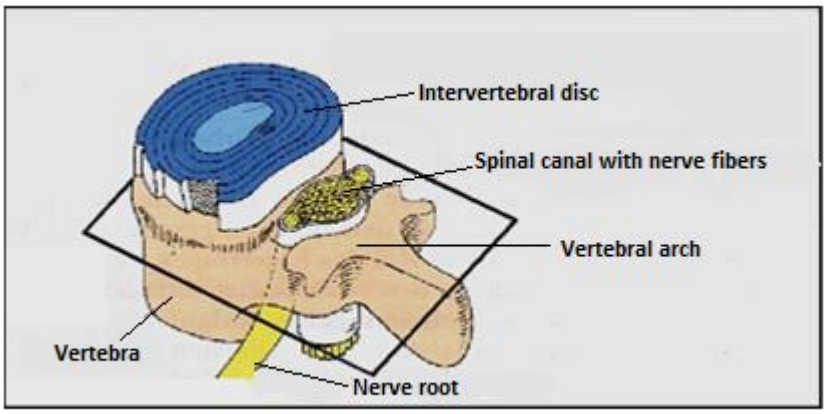
# SURGERY: LUMBAR SPINE STABILIZATION (Fusion, Fixation)

Your diagnostic tests as well as the physical examinations have shown that you are suffering from **spinal instability**.

Before you should undergo surgery, it is important that you become familiar with your illness, the surgical procedure and what you, yourself, may do in order to help decrease your pain. It is important for us, that we provide you with enough information so that, when we ask for your consent to surgery at the end of this document, you will be able to make your decision responsibly. Please read this material carefully and consult with your treating doctor should you have any questions.

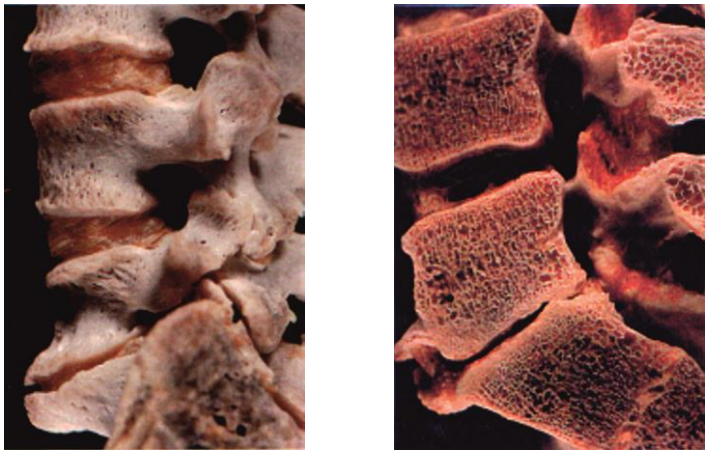
## WHAT IS SPINAL INSTABILITY?

The spine protects the spinal cord and the nerves from injury. The spinal cord is located within the spinal canal which is surrounded, towards the front, by the vertebrae and the intervertebral discs and, towards the back, by the vertebral arches and intermediary ligaments.

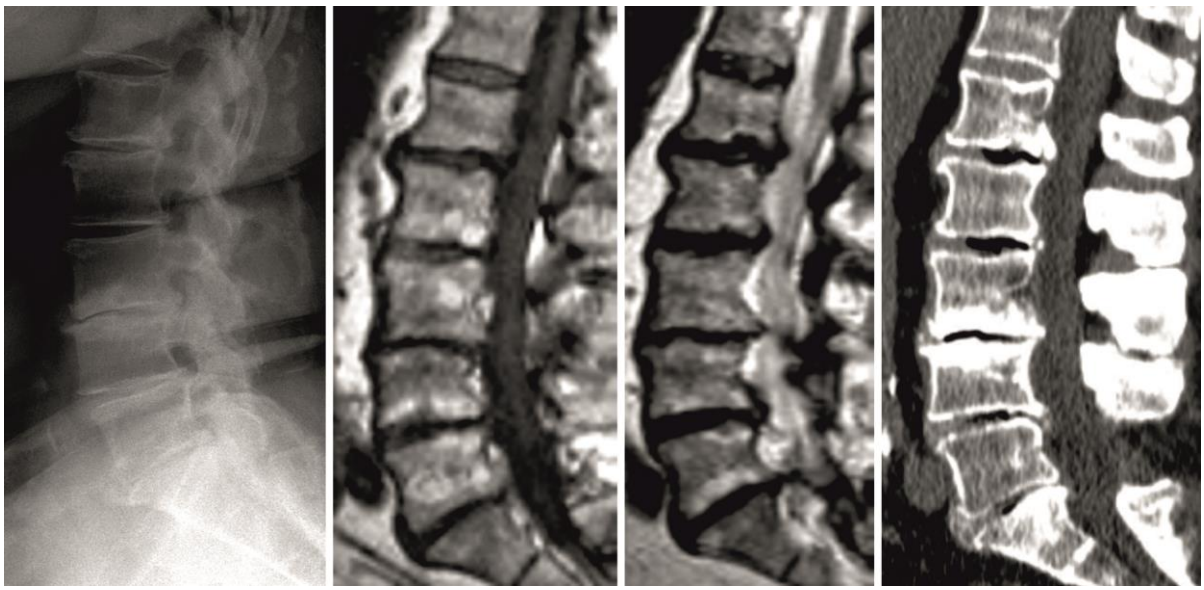



Illust.1: Location of the spinal canal

This structure – aside from its protective function – enables certain levels of the spine (movement segments) to move in an orderly fashion relative to each other while, at the same time, functioning as a support system for the internal organs. When these functions, generally combined, are injured, the spine movement becomes disharmonic, resulting in instability.



*Illust.2: Segment instability on a specimen*

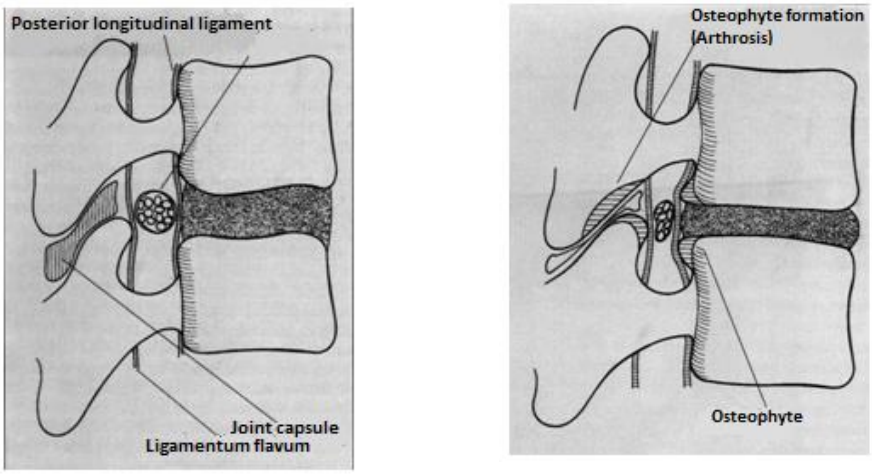


Illust.3: Segment instability shown on an X-ray, MRI (T2 and T1) and CT

**Spinal instability may be due to:**

- Acute cases:
  - Injury
- Chronic cases:
  - **Degeneration** of the spinal column
  - Condition following surgery
  - Developmental anomaly
  - Tumor
  - Inflammation

The narrowing of the spinal canal following segmental instability may result in compression of the nerve root components followed by increased muscle activity. Later bone spurs (osteophytes) may develop in an effort to stabilize the injured joints.
In most cases, this process does not cause any symptoms and requires treatment only in the case of complaints.




Illust.4: Normal nerve root and under compression

Most spinal diseases are due to degeneration caused principally by the deterioration and abrasion of the intervertebral discs.

**The Aging Spine is the result of degeneration:**

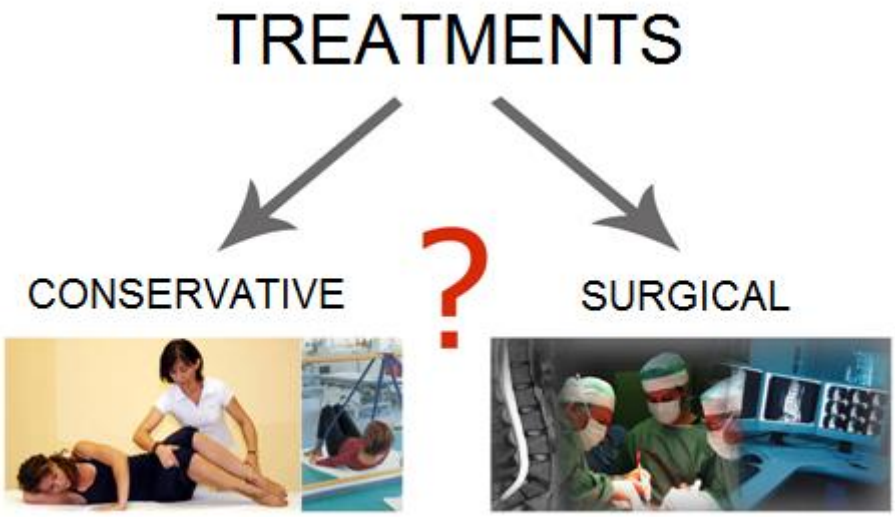
- The water content of the intervertebral disc decreases, the cartilage shrinks in height.
- The stabilizing ligaments loosen.
- Bony deposits appear on the rim of the vertebrae.
- The facet joints become deformed.
- The width of the spinal canal is narrowed.

The Aging Spine process

## WHAT ARE THE SYMPTOMS OF INSTABILITY?

- Increased pain at weight bearing:
  1. Lumbar and zonal and/or pain radiating down the postero-external surface of the lower extremity toward the buttocks, thigh and knee may originate in the support elements of the spine.
  2. Pain accompanied by numbness below the knee or in the groin, or along the anterior internal surface of the lower extremity, may be due to compression of the nerve elements.
- Restricted movement in a segment of the spine.
- Sensory disturbance or insensibility in some areas of the lower extremities.
- Weakness or myoparalysis of the lower extremity muscles and/or muscle groups.
- Vegetative - bladder and bowel - dysfunction.
- Pain avoidance, antalgic posture.
- Limping.

## WHAT TREATMENTS ARE AVAILABLE?




Basically, there are two treatment possibilities:

**1. Non-surgical (Conservative) Treatment**

**In cases where there is no, or only a slight chance of, nerve damage and the stability of the spine can be re-established, we recommend conservative treatment.**

**Goal:**

- To re-establish spine stability and develop the corset muscles.
- Reduce possible inflammation and thereby,
  1. increase walking distance,
  2. decrease pain, and,
  3. increase muscle strength.

**Methods:**

- Initially, bed rest (3-4 days).
- Medication, other physiotherapy and alternative treatment methods.

**The most effective conservative treatment method is the series of antiphlogistic intravenous infusions in conjunction with physiotherapy.**

**Longterm:**

- Life style changes: decrease/stop alcohol intake and smoking, change dietary habits, lose weight, reduce stress, etc.
- Treat sleep and other related psychosomatic disorders (i.e., chronic gynecological and cardiovascular diseases, as soon as possible).
- Restore physical and emotional state.
- Increase activities: regular exercise, followed by, physical training.

If, in spite of conservative treatment, there is no improvement or neurological symptoms, such as lower extremity paralysis appear, then surgery is necessary to free the nerve from the excessive compression and stabilize the spine segment.

## 2. Surgical Treatment

Surgery's goal is to stabilize the unstable spine segment with metal implants and to correct possible nerve compression and end the source of pain.

### BEFORE SURGERY

### 1. Preparing for Hospitalization

- Check for any focus (hidden infection site), i.e., purulent tonsils, urinary tract infections, gynecological infections, etc. Their treatment is very important since an infection may cause pathogenic agents to travel to the surgical site through the blood stream causing wound infection.
- General medical preparation - when required.
- Anaesthesiological examination with laboratory, x-ray, ECG and ultrasound results.
- The Patient may require blood substitution or transfusion during lumbar stabilization surgery or immediately thereafter. Autotransfusion is desirable, if your doctor is in agreement. Please ask your doctor regarding special informational material available regarding blood substitution.

## 2. Reminders (definitely consult with your doctor)!

- Non-emergency surgery may be performed only after 3-6 weeks following upper respiratory inflammation, urinary tract infection or other infections.
- Antigoagulants should not be taken for a few days before the planned surgery. Syncumar, Warfarin and Clopidogrel must be stopped for 10 days and ASA, Aspirin protect, etc. medications stopped for 5-6 days, or rather, substituted by Heparin derivative injections.

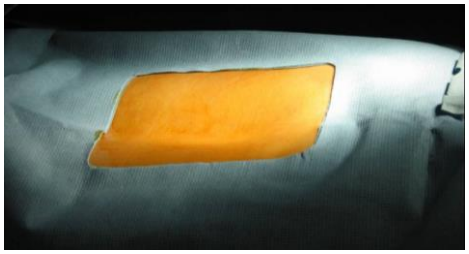
## 3. Inhospital Preparation

- Anti-thrombotic injection is given the afternoon prior to surgery and sedatives the night before.
- The day of surgery:
  - disinfectant bath,
  - removal of dentures,
  - removal of nail polish,
  - anti-embolism support stockings or bandages applied,
  - regular medications taken with one swallow of water as discussed with the anaesthesiologist beforehand,
  - presurgery injection (premedication)
  - infusion begun – as indicated by doctor

**Do not drink anything besides the liquid needed for your medications, do not eat and do not smoke!**

### WHAT HAPPENS IN THE OPERATING ROOM?

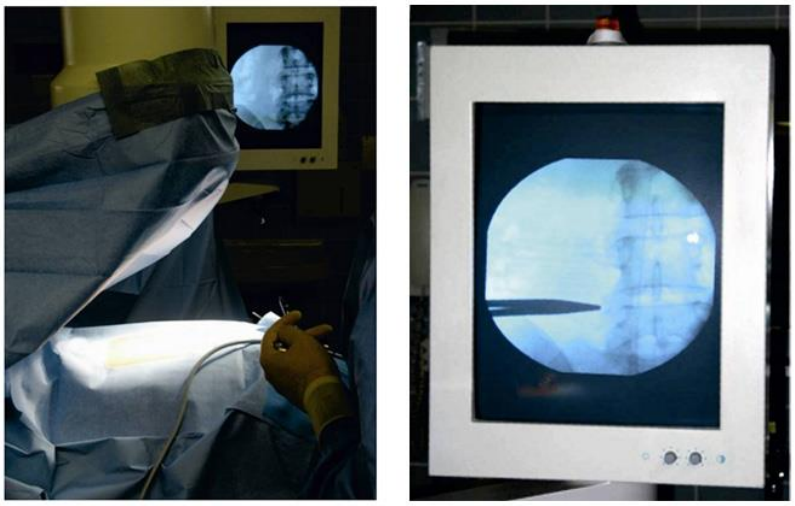
- The surgery will be performed under anaesthesia. The anaesthesiologist will inform you regarding the particulars of the anaesthesia and ask you to sign a consent form.
- Once your are on the operating table and following the administration of anaesthesia, you will be turned onto your stomach.
- The surgical area may be shaved.
- The surgical area and the surrounding skin will be washed with a disinfectant several times.
- You will be covered with a sterile sheet with only the surgical area exposed (isolation).



Illust.6: Isolating the Surgical Area

**The Surgical Procedure**

- We mark the level of the narrowing and the point of instability with the help of an image intensifier.



**Illust.7: Locating the Instability with an Image Intensifier**

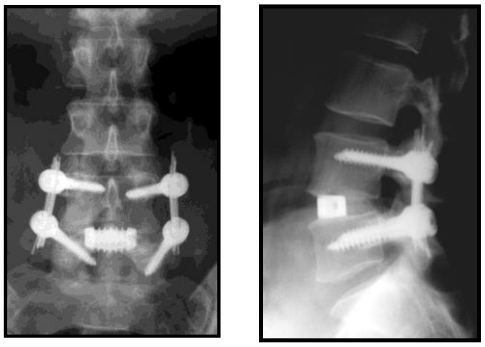
- An incision measuring 12-25 cm in length is made above the affected spine segment.
- Following incision and the tissues below are opened, haemostasis (the control of bleeding) follows.
- The musculature is slid off the surrounding ribs - carefully, so as not to cause damage - then, with special instruments, the necessary soft and bony areas removed in order to allow the nerve elements to run freely (decompression).
- The worn down and no longer useful intervertebral disc is removed and replaced with titanium or plastic (polyetheretherketone, PEEK) spacers or spacers made on site out of bone cement to maintain the appropriate distance between the vertebrae. In order to attain ossification of the vertebrae in question, the ground bone prepared from the bone removed during the decompression phase or artificial bone is pressed into the empty space between the vertebrae next to the spacer.
- In most cases of stabilization surgery, in order to encourage bony fusion (ossification) in a timela manner, the Patient's own bone is used to fill in the spaces between the vertebrae. This requires autologus (the Patient's own) bone of a given quality and quantity gained while freeing the neural elements.

- There are situations, however, when neihter the quality nor the quantity of bone is adequate for bony fusion. In these situations, in the best interet of the Patient, we are forced to use either artificial bone or bone harvested from another human being. Medical literature has shown that very good ossification can be obtained with human bone products.

- Bone products in Hungary may be used safely. These products are acquired from live donors and used daily in traumatology and orthopedics. The donors must meet very strict requirements and are screened to ensure that no disease is transferred to the recipient through the bone products. Bloor tests are run for HIV1, HIV2, Hepatitis B, Hepatitis C and syphilis (Lues). If any one of the pathogens is found in a donor organ, the organ will be taken out of circulation and will not be transplanted into another human being. Yet, though extremely rarely, and in spite of all the precautions a disease will be transferred from a donor to a recipient. Fortunately, we have not experienced a similar occurrence since only after going through very strict standardized sterilization steps is a bone graft transplanted into a recipient.

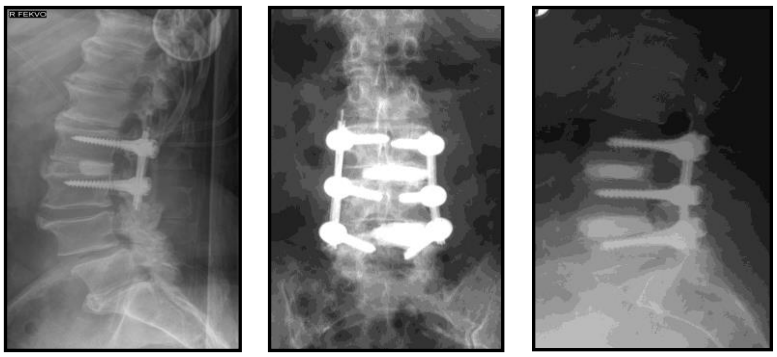
- The spacer or bone cement may be placed in the front half of the space (in this case, the ground bone occupying the area behind the cement), or also in the back (when the bone cement occupies the space on the abdomen side), or it may fill the entire space cavity (in this case the bone cement will be on the vertebral arches). According to our present know-how, the positioning of the cement (spacer) and ground bone vis à vis each other bears no significance on the successful outcome of a surgery. (We, ourselves, are involved in a long term scientific study wherein we follow the condition of our fusion patients, who are part of the study, with the goal of analyzing possible long term differences between the patients operated with diverse fusion techniques.)

## Placement of intervertebral spacers (numbered series or prepared on site)



Illust.8/ab X-rays of a titanium spacer

Illust.9: X-ray of plastic (polyetheretherketone, PEEK) spacer



Illust.10/abc: X-rays showing bone cement spacers in one and two levels

- The area is then immobilized with the stabilizing implants consisting of a combination of transpedicular screws and rods.
- One or two drains are placed in the wound to remove effused blood.
- The wound is closed in several layers, covered with a sterile bandage and an x-ray is taken.

## WHAT HAPPENS AFTER SURGERY?

- You will stay in the operating room for a time after surgery for observation
- Depending on your condition, you will be taken either to the observation room or the ICU.
- The anaesthesia will gradually wear off in a few hours, whereupon, you will be given an injection or pills to lessen your pain.
- It is important that you begin doing breathing and vascular exercises as well as locomotion routines soon after under the guidance of a physiotherapist, in spite of pain.
- Anti-thrombotic injections are routinely given.
- It is important that you drink plenty of fluids such as fruit juice, tea, soup and non-carbonated mineral water.
- You will be able to get out of bed one day after surgery with the physiotherapist's assistance.
- It is important that you heed your physiotherapist!
- The drain is removed from the wound 1-2 days after surgery.
- You may be discharged in 5-7 days after surgery, if no problems arise.
- At discharge:
  1. You will be given your Hospital Discharge Summary papers.
  2. Please consult your treating doctor for any questions!
- You must strictly keep the wound away from water. Suture removal should be 12-14 days after surgery, but not necessarily at this institution.
- The date of your first checkup (4-6 weeks post op) will be found in your Hospital Discharge Summary papers.
- Rehabilitation – as discussed with the treating doctor and under the care of specialists.
- We do not plan to remove the titanium implant.

## WHAT HAPPENS IF THE SURGERY IS CANCELLED?

- The nerve root may be permanently damaged, due to the lengthy compression time.
- The pain in the spine and the lower extremities may increase further.
- The limitations on your movements may become more serious.
- The quality of your life may continue to deteriorate.
- Surgery performed at a later date may be technically more difficult with the likelihood of success diminished.

## 1. Possible unforeseen complications of surgery

- The membranous sac that encases the spinal cord, the dural sac, may tear. In certain situations during surgery, the dural sac may open causing the liquid (the cerebrospinal fluid) contained within to freely flow out. The membrane is immediately closed with sutures and adhesives. Healing of the membrane occurs in 3-5 days, during which time, in order to keep the pressure of the liquid low, you will be required to lie flat on your back and will not be allowed to get out of bed.
- Although this happens seldom, the nerve root may be functionally damaged. This is, generally, due to circulatory/mechanical damage resulting from the forced tight conditions of nerve root decompression. This may be temporary or permanent and may influence nerve root function partly or completely. Symptoms: sensory disturbance, muscle weakness (partial or complete palsy in certain muscle groups) in the affected areas.
- Excessive blood loss. The cause may be found in the individual anatomical variations and possible inflammation. The blood is replaced during and after surgery.
- During surgery, while still on the operating table, the positioning of the transpedicular screws to be implanted are checked with an x-ray image intensifier during insertion and following implantation. This is often enough for assessing the proper positioning of the screw. At the same time, however, since this instrument is not made for three-dimensional imaging, it may be that the implanted screw may touch the nerve root either in the spinal canal or by boring through the side of a vertebra thereby causing radiating pain. If we are confronted with this complaint, we will perform a CT scan examination that should show the screw not positioned properly, in which case, another surgical intervention will be needed for the correction.
- As we age, especially in women, the bony structure becomes weakened due to hormonal changes and other metabolic disorders. This is what we call osteoporosis. Under normal conditions, the implanted screws stay in the vertebral body supported by the cortical substance of the bone and wedged into the spongy substance. In the case of osteoporosis, the altered and weakened bony structure is not capable of maintaining the screws in place, thereby allowing the screws to loosen. If we are aware of the patient's osteoporosis, or the patient's age or basic disease, or the quality of the bones seen during surgery makes us suspect it, we have the chance to fill in the spongy substance of the vertebrae with bone cement thereby increasing the screw's stability in the bone. It is important to note here that this does not ensure absolute stability; the screw may still come loose in spite of the above described "augmentation". Bone fragments, resulting from the bone cement implanted into the vertebrae, may be compressed into the veins supplying the bone, then, into the pulmonary arteries through the veins causing embolism and clotting followed by all the known consequences involving the internal organs.
- In cases of osteoporosis, the spacer implanted between the vertebrae (prepared ahead from synthetic material or formed from bone cement during surgery) may shatter in the vertebrae. In these cases, the weakened state of the anterior support will cause the stable system to lose some of its stability. This will not cause complaints and, aside from this, the bony remodeling between the vertebrae will still take place. Should the weakening of the

anterior support generate abnormal movement, the screws in the segments may become loose. In these cases repeat surgery may be required depending on the complaints. Occasionally, the ground bone compressed behind the spacer may be displaced due to the micro movements causing nerve root compression there. In these cases again possible surgery may come under consideration.

- The spinal cord ends at the nerve fibers called the cauda equina, usually at the first or second lumbar vertebra level, from where they continue through the dural sac until they leave the spinal canal as nerve roots. In upper lumbar segment surgical procedures, these fibers may suffer blunt injury and the muscle groups of one or both lower limbs direct injury at the time of dural sac incision during deeper lumbar procedures resulting in total or partial, permanent or temporary weakening. Since bowel and urine control is the function of these nerves, temporary or permanent bowel and/or urine dysfunction may result.
- Situated in front of the vertebral column, the major artery and major vein separate at the anterior surface of the lumbar spine to continue down toward the lower limbs. Should their anterior wall surface be injured during screw insertion or while emptying the intervertebral disc space, the instruments boring through the anterior wall may injure same causing these transporters of volumes of blood significant blood loss. Any surgical treatment of these cases would require the assistance of a vascular surgeon. In extreme cases, injury to such a major blood vessel could lead to exsanguination and even death.

**2. Possible early complications, 1-2 days following surgery**

- Post surgical pain in the legs or muscle weakness. This is due to oedema and swelling of the nerve. Infusion, physiotherapy and electrotherapy treatments may be required.
- Urination difficulties might temporarily require catheterizing and the bladder may require treatment (exercise, medication).

**3. Complications that might arise 3-4 days following surgery**

- Suppurative wound. Bacteria living in our system but not causing diseases may settle in the fresh surgical wound causing its suppuration. This process has typical symptoms:

  a. Wound inflammation: erythema, swelling, pain, warm to touch, discharge
  b. General symptoms: fever, despondency, general indisposition

The suppurative wound can usually be treated with antibiotics and local cold treatments, however, surgery may be necessary at times in order to clean the wound and put a drain in place. The drain will continue the cleaning process for 5-6 days during which time, depending on the condition of the Patient, mobilization may be started.

**4. Possible future complications**

- Thrombosis – inflammation of lower extremity varicose veins.
- Pulmonary embolism – blockage of artery in the lungs.
- Functional disorder of the bladder and rectal muscles.
- Accelerated degeneration of neighboring levels.
- Displacement of the implant and, in case of metals, breakage (i.e., screws, plates). X-rays and CT scans prepared during the follow-up examination help us observe the condition of the operated spine segment. When the purpose of the surgery is to bring

about stabilization, the implants or cages have a role to play only until bone remodeling has occurred. Once bone remodeling and vertebral fusion have taken place, they are no longer needed. Bone remodeling will, generally, occur even if the implants move or are broken due to metal fatigue. We often find broken screws with no symptoms or complaints. The implants or foreign objects are removed only when bone remodeling or vertebral fusion has not taken place (false joint developed) and causing the Patient complaints.
We have found, though seldom, screws and rods broken several years after surgery especially in cases where several segments required extensive bridging and fusion.

## PHYSIOTHERAPY:

**The spine requires special attention and care following successful surgery**. As the result of surgery, the spine segment involved changes in structure, increasing the load on the neighboring spine segments. It is extremely important that the functional capacity of the operated spine segment be restored and the neighboring areas protected through special kinesitherapy. In order to avoid overloading the spine, correct posture change and workflow should be taught within the context of ergonomics as well as preparing the body for sports.

The healing period following surgery may be divided into several phases. In addition to the required medical care, for the spine to be completely restored, various movement programs are necessary together with ergonomic consultation. This is where physiotherapy can provide excellent care.

### Phase 1. First 6 weeks after surgery

Targeted kinesitherapy and ergonomic life style consultation will begin, if permitted by the Patient's condition, the day following surgery with the goal to regain the body functions necessary for self-sufficiency (turning in bed, sitting up, sitting, standing up, walking, etc.) as soon as possible, to unburden the operated spine segment, avoid unnecessary loading as well as pain free posture and gait correction.

The targeted activity program's goal is to reestablish and regain the stability of the spinal segment involved by maintaining and strengthening the core musculature. It is very

important during this period to keep the operated spine segment away from any forces that might cause dislocation.

Ergonomic consultation includes practicing the series of movements required for basic self-sufficiency while maintaining the physiologic curvature of the spine as well as determining precisely the extent to which the spine can be or should be loaded (the amount of time spent sitting, standing, walking, how much weight may be carried, etc.) during this phase.

You should avoid extreme movements of the spine that include forward bending, trunk twisting or sideways bending even while turning, sitting or standing up from bed.

Long periods of static sitting or standing should be avoided. Even individuals with hardened musculature will feel its tiring effects after 15 minutes and resulting in a stooped posture.

Walking, light work and physiotherapy may be increased a little every day.

Your rule for resting and activity time should be a little but often.

**Phase 2. The second 6 weeks after surgery (second stage of tissue healing)**

The goal of the early rehabilitation phase is to return you to your everyday activities, to restore the functions and the reduced functional capacity (range of movement, strength, endurance) of the operated spine segment.

Within the framework of ergonomics, we will practice the daily used movement patterns (both at home and at work) while protecting the spine and, furthermore, will determine the spine's loading capacity.

Longer and longer walks and hikes on a variety of terrains.
Swimming and underwater exercise recommended.
Static loading (sitting, lolling about) may be increased until there is no pain.
The prevalent stooped posture will be replaced with other body postures (kneeling, squatting, down on all fours).

**Phase 3. Three months after surgery.**

The goal of the later rehabilitation phase is to establish realistic personal goals and create safe daily and sports activities.

The targeted movement program will help develop the trunk musculature and re-establish muscle balance to actively support and protect the spine from possible overloading. Sports preparedness (sports specificity) will play a significant role in ergonomic consultation along with protection of the spine.

We offer six-week and three-month post-op outpatient group physiotherapy (max. 5 persons) sessions covered by public health insurance. Individual condition evaluation precedes the physiotherapy in all cases. The evaluation is by appointment which you may request by calling our dispatchers at (1) 887-7900. Following the evaluation, the physiotherapist will, based on professional aspects, decide which personal movement

program to recommend and personally help you register for the group physiotherapy sessions. Doctor's referral is required for both the condition evaluation and the group physiotherapy. Should you prefer individual physiotherapy sessions, these are available privately. For details, please turn to the dispatchers. Please bring your own ambulatory aids (walkers, elbow crutches, etc.) at the time of admission.

## REHABILITATION FOLLOWING SURGERY

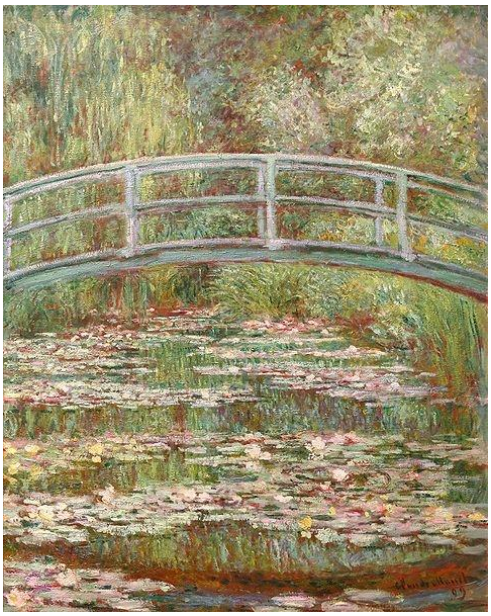
The spine segment involved cannot be considered healed immediately following surgery. Thus, in order to protect the spine and help the healing process, it is very important that you listen to and follow the advice of the professionals leading the rehabilitation.

The six weeks following surgery is the first regeneration phase. This is a seemingly slow, but active time during which you need to endeavor to develop a new life style.

In order for a new action or behavior to become permanent or habitual, it has to be repeated regularly for an entire month. This holds true when attempting to change a life style.

## WHEN IS SURGERY CONSIDERED A SUCCESS?

Surgery is considered a success when your condition and your quality of life following surgery improved.



It is important to remember that this is a process – a process that slows down at times because the "nerve is slow to forget".

Unfortunately, a successful surgery does not stop the aging process nor does it solve the problems and tensions affecting body and soul resulting from your life style and outside stresses. Thus, it is important that you work toward a healthy life style, exercise, avoid loading the spine improperly and stabilize your spine through activities that decrease tension (i.e., relaxation, yoga, etc.) and lower the risk of a new herniated disc.

*Thank you for choosing us!*

# PRE-SURGERY INFORMATION
# FROM THE PSYCHOTHERAPY DEPARTMENT

The Psychotherapy Department has been in partnership with the medical staff of the National Center for Spinal Disorders since its inception working closely together in caring for all your health care needs with our colleagues, psychologists and psychiatrists committed to the research and treatment of pain.

## WHAT IS THE CONNECTION BETWEEN EMOTIONAL AND PHYSICAL PAIN?

When in distress, the body has a choice and prepares itself for a fight or flight. This ancient reflex tenses the muscles at the same time getting them ready to assault or flee. The result of the constant tension, however, is pain.

Stress ► Muscle Tension ► Pain

Pain may begin with an episode that is primarily a physical injury, but, when the pain persists for several months down the road, then it is very probable that the psychological stress and the physical drain have become permanent, at the same time. The acute injury has turned into chronic muscle tension which is now causing the pain.

The constant tense back muscles can further worsen the condition of the spine.

„I don't feel harassed – don't feel that this applies to me."

People significantly differ from each other in the way they notice the signs of inner and outer stresses. Some cry easily and immediately feel even the smallest changes in their bodies, while others only notice these changes only when there is a problem and pain.

The latter is typical of those suffering from **chronic pain**. They tolerate much for a long time, and attempt not to dwell on it, to bear it. Yet, pain is stressful in and of itself – inner stress.

It may be that later, they begin to worry about their back pain which causes the back muscles to tense even further. This, of course, increases the pain. Soon, the devilish cycle begins wherein the pain causes emotional stress, causing the muscles to tense more, which then causes even stronger pain, causing more emotional stress, leading to even more pain.

Most chronic pain sufferers experience their indisposition, fear and hopelessness as bodily torments which others experience on an emotional level. This is why we often hear: "I don't need a psychologist or psychiatrist, my back hurts, that's all!" This, in reality, is a mistaken opinion. Chronic pain is both an emotional and a physical agony causing not only our physical but also our emotional condition to worsen.

**You are now about to undergo an important first or repeat spine surgery.** Your doctor has discussed with you the surgery necessary for changing the current anatomical condition of your spine. It is also important for you to know that your current state is affected not only by your physical injury and the changes your spine is undergoing but also by the chronic stress and its negative emotional consequences.

Surgery will “only” have an effect on your spine. It will have no influence on your emotional state, feelings, thoughts or life style. Thus, the increased tension (felt in the tightness of your back muscles), fear, depression and feelings of hopelessness that you might have felt so often, have experienced or are experiencing currently can only be changed with your cooperation.

**In order to end this diabolical cycle, psychological and medication (psychopharmacological) treatment and consultation may be – and usually is – required.**
Fifty percent of chronic pain sufferers definitely suffer from depression with the remainder living in a state of high stress and tension (resulting in sleep disorders and a variety of physical symptoms).

Thus, in order to best care for our patients, we ask that you fill out the **“Condition Evaluation”** form to provide us with information regarding your emotional state. Should the questions show that you are suffering from depression or anxiety, we will help you by personally conversing with you and having you undergo individualized tests.

It is natural and you should expect surgery to increase your emotional tensions for which reason you will need a period of convalescence (the postoperative period) in order to overcome the effects of surgery. Usually, it takes 4-6 weeks until you notice any signs of recovery.

**Important! Do get enough sleep before and after surgery!** If, for instance, you have sleeping difficulties, be it due to pain or other reasons, do let your treating doctor know since a sleeping disorder is the first sign of decreased psychic stability and emotional strength.

Once the diabolical cycle of pain has ended with your help, your quality of life will be greatly improved! In order to achieve it, professional medical intervention is necessary to make bodily recovery possible and your cooperation, to decrease your suffering. You will need patience, especially in the early period of convalescence, so that you may enjoy each day the small changes and to give yourself time for regeneration. You will need to accept the fact that your pain will change slowly, which is a sign for you to make changes in your life style and emotional state. Gradual increase in activity (our physiotherapists will offer detailed advice and instruction), proper stress regulating and mood elevating treatments (you may count on our psychologists and psychiatrists for assistance) and changes in life style (weight loss, increased activity) will lead you out of suffering into a FULL LIFE!

Our psychologists will be at your disposal during your hospital stay. Please let your treating doctor or nurse know should you wish to see them

## CONSENT TO SURGERY

## DISORDER: LUMBAR SPINE INSTABILITY
## (Instability, Stenosis)
## SURGERY: LUMBAR SPINE STABILIZATION
## (Fusion, Fixation)

- I have carefully read the detailed information given to me by my treating doctor both verbally and in written form.
- I was informed regarding my disorder and the reason for my resulting complaints as well as the course my disorder might follow should I not choose surgery. Thus, I understand that, according to today's best medical knowledge, permanent improvement of my condition can only be attained through surgery. My questions regarding the surgery were answered extensively.
- I was informed regarding the advantages and possible disadvantages of surgery.
- I was given to understand the meaning of surgical risk.
- I was informed in detail regarding possible complications, their probability, nature and treatment as well as the temporary or enduring but seldom terminal condition deterioration as the result of surgery.
- I understand that I might have to wear an exterior fixation device for three months following surgery.
- I consent to a blood transfusion should it become necessary during the course of surgery.
- I was informed regarding postoperative treatments.
- The anaesthesiologist has informed me regarding the anaesthesia for which I give my consent separately.
- Having carefully considered all of the above facts and in order to treat my disorder, I request that the surgeon chosen by the Head of the Department perform the surgery to which I have given my consent.
- I have no further questions regarding the surgery.
- Having read the foregoing, I, the undersigned, being of sound mind do, hereby, sign this Consent of my own free will and volition in the presence of two witnesses.

Budapest, ……..

…… ……

*Surgeon* *Patient or Legal Guardian*

Witness (Name, Address): ……

……

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……

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