

CERVICAL SPINE
HWS
Colonne cervicale
Columna cervical

THORACIC SPINE
BWS
Colonne torasique
Columna torásica

LUMBAR SPINE
LWS
Colonne lombaire
Columna lumbar

CAUSES OF BACKACHE:

URSACHE VON RÜCKENSCHMERZEN | CAUSE DE LA DOULEUR | CAUSA DEL DOLOR

FORCED ATTITUDE
Zwangshaltung
Attitude forcée
Actitud forzada

WRONG MOVEMENT PATTERNS
falsche Bewegungsmuster
mauvais patrons de mouvement
patrones de movimiento erróneos

ORGANIC SPONDYLOPATHY
organische Wirbelsäulenerkrankung
spondylopatie organique
espondilopatía orgánica

LACK OF EXERCISE
Bewegungsmangel
Manque d'exercice
Falta de ejercicio

HEREDITARY DEFECTS
angeborene Schädle
défauts héréditaires
defectos hereditarios

PENSION FUND SYSTEM
Rentensicherungssystem
Système de fonds de pension
Sistema de fondos de pensión

OVERWEIGHT
Übergewicht
Exces de poids
Exceso de peso

PSYCHOLOGICAL STRAIN
psychische Belastung
contrainte psychologique
tensión psicológica

SOCIAL STANDARDS
gesellschaftliche Normen
normes sociaux
normas sociales

BACKACHE: ENTIRELY NORMAL?!

BACKACHES AND INTERVERTEBRAL DISK AILMENTS ARE A HUGE PROBLEM IN THE WESTERN WORLD. IN GERMANY ALONE, THE ECONOMIC IMPACT IN 1999 REACHED APPROX. EUR 20 BILLION DUE TO ABSENTEE BACKACHE PATIENTS. HOW DOES IT HAPPEN THAT IN THE WESTERN WORLD, HUNDREDS OF THOUSANDS OF PATIENTS ARE OPERATED FOR A SLIPPED DISK WHILE IN AFRICA, HOWEVER, SLIPPED-DISK OPERATIONS ARE QUITE RARE.

The following will explain the basics: Every spinal column - I repeat - every spinal column ages. Within the framework of this aging process, the intervertebral disk e.g. the lumbar spine loses its elasticity and thus its „resilience“. To sum up, one can say that the spinal column loses its stability. Since humans go through life mostly in an upright position, the stability of the spinal column must be sustained. This is mainly achieved by the musculature that braces the spinal column, mostly the back muscles but also the abdominal muscles. These spinal column-stabilizing muscles can be compared to the rigging of a ship's mast. If this rigging is missing, the mast loses its stability and will break apart at the first gust of wind.

How quickly a spinal column ages and how strongly the intervertebral disk loses its elasticity, is, above all, a question of genetics, aside from the wear and tear of everyday life. Entire galleries of ancestors who have suffered from backache can be found in clinical everyday life. Allow me to quote a beautiful phrase: „Humans have connective tissues that can cost either EUR 1,000 or EUR 100 per square meter: everyone can be found somewhere within this quality scale.“ Again and again we find spinal columns of older humans that show no signs of aging and wear, while on the other side we find spinal columns of 30-year-old humans that already look like those of 70-year-old individuals.

The aging of the spinal column can be seen on an x-ray film; typically, in the form of bone reactions at the mechanical segments (see fig. 2). The body is quite intelligent, it does not like instability where it does not belong and produces supporting reactions of the bones (so-called spondylosis, fig. 3), in other words, the spinal column stabilizes automatically. This can take many years; the extent of this supporting reaction depends to a large extent on genetics (some have more support, others less). These additional stabilizing bone extensions can lead over time to the so-called „soothing stiffening“ of the spinal column.

Another factor that needs to be taken into consideration is that apart from the aging of the intervertebral disk and the loss of stability of the spinal column, humans also lose

muscle power with age. Research shows that humans who do not train with weights lose up to 20 to 40% of their muscle power up to the age of 70. The problem is that a weaker musculature has to sustain a more unstable spinal column. As a matter of routine, the muscles do their best, more or less as a reflex. They support as firmly as possible until they „cramp“. Muscular hardenings occur which are responsible for backaches but also for neck pain. Some typical instances of this kind are, for example, tension headaches where a hardening of the shoulder/neck muscles radiates from a bilateral headache in the back of the head towards the forehead.

The aging spinal column needs muscle power; and the therapy consists of building up the supporting musculature of the spinal column. The reader can easily recognize that this will be problematic in the beginning. An overly weak musculature that has led to a hardening of the muscles must now be trained. Complaints will in the beginning of the training largely involve the core muscles.

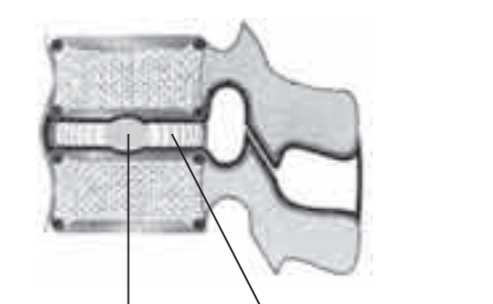
Those who have suffered this experience should not be discouraged. Americans say: „Forget your back, go on.“ Little consideration is paid to the worsening of the pains. The patient receives a step-by-step plan which he has to follow.

I think, the truth lies, as it always does, in finding a happy middle. It is important that the patient be motivated and not expect positive results too soon. The muscles need time to regenerate and the core muscles have to be built-up slowly. Strength training of the muscles should take place every two days, with the time in between allowed for regeneration. Strength training of the core muscles should also avoid larger rotations of the lumbar spine, as the lumbar spine is not built for this kind of the movement.

The aforementioned sections only touch upon the problem of „backaches“, yet there is still much more to be said. This information does not replace a careful study of the different, manifold causes for backaches and/or a checkup by an orthopedist (see also fig. 9).

FIGURE 2

THE SO CALLED MECHANICAL SEGMENTS (BLACK FRAMED)
Das sog. Bewegungssegment (schwarz umrandet)
Les segments mécaniques (encadré noir)
Los llamados segmentos mecánicos (marco negro)

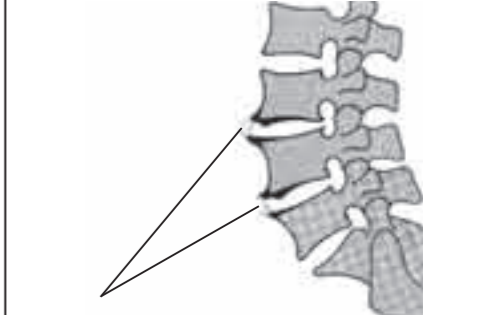


INTERVERTEBRAL DISK: RING
Bandscheibenring
Disque intervertébrale: anneau
Disco intervertebral: anillo

INTERVERTEBRAL DISK: CORE
Bandscheibenkern
Disque intervertébrale: centre
Disco intervertebral: centro

FIGURE 3

START OF SUPPORTING REACTIONS OF THE MECHANICAL SEGMENTS (SPONDYLOSIS)
beginnende knöcherner Anbaureaktion am Bewegungssegment (Spondylose)
commencement des réactions d'appui des segments mécaniques (spondylose)
inicio de reacciones de soporte de segmentos mecánicos (espondilosis)



ADVANCED STAGE
im späteren Stadium
etape avancée
etapa avanzada

ISCHIAS SYNDROME: ALSO QUITE NORMAL?!

As explained in the previous chapter, the spinal column ages, as does the intervertebral disk (and not only the intervertebral disk). This can happen in two ways, either subtly, when the intervertebral disk gradually becomes flatter and loses flexibility or suddenly, when a fissure in the ring of the intervertebral disk occurs whereby the core of the intervertebral disk is pressed: a slipped disk.

The typical age for the occurrence of a slipped disk is between the ages of thirty and the mid-forties, simply because during this time the core of the intervertebral disk is still flexible enough to squeeze through the fissures of the ring. In the case of the elderly, a slipped disk is rather the exception; there are other causes for Ischias syndrome. I will not go into details at this time.

A slipped disk is a not unusual form of aging of the intervertebral disk. It only becomes unpleasant if it presses on nerves and here

„press“ is not to be taken literally. The problem with a fresh slipped disk is not the pressure, but a high-grade inflammation of the nerve due to the very „aggressive“ tissue of the intervertebral disk.

This inflammation of the nerve root (see fig. 6) leads to violent pain along the nerve tract, i.e. from the lumbar spine to the leg. This unfortunate fresh slipped disk which leads to an inflammation at the nerve root is relatively rare. There are many slipped disks which cause no problems at all! Some analyses show that if patients who do not have any backache are examined in a nuclear spin tomography for slipped disks, 70 out of 100 cases present slipped disks which do not cause any problems.

If, however, one has this unfortunate slipped disk where the tissue of the intervertebral disk leads to an inflammation of the nerve root, we must therapeutically attempt

to treat this inflammation. The most effective way is to deposit highly effective anti-inflammatory agents as closely as possible to the nerve root. This can be achieved by a peridural (fig.7 and 8) or perineurial injection and/or catheter (minimal invasive spinal column therapy). In this case, a suitable drug, e.g. cortison, is brought to the ignited nerve root. This sounds more awful than it is. The injection comes after a small local anesthesia and normally does not hurt.

If one deals with the inflammation of the nerve, the ischial pains lessen. However, the slipped disk remains but only causes further problems if it lies in a disadvantageous position and mechanically narrows the outlet of the nerve where the nerve leaves the spinal column. We call this „neuroforaminal stenosis“. In this case, the pressure on the nerve causes the problems and not the inflammation. Patients describe a stress-related pain along the nerve, also a tickle and, from time to time, weakness of the legs. Typically, this occurs after standing or walking for some time and becomes better if the patients sit down. Some of our readers have certainly heard of the „showcase illness“; the spinal column-related (claudicatio spinalis) in contrast to the blood circulation-related showcase illness (claudicatio intermittens). The therapy for this disease is somewhat more complex, often an operation is necessary.

In summary, I would like to stress the following: a nerve root inflammation is usually the cause for the classical ischial pain which is caused by the tissue of the intervertebral disk. If one deals with the inflammation, an operation of the slipped disk is only necessary in rare cases. A slipped disk can be seen as a sudden „aging of the intervertebral disk“ and is quite common. If a nuclear spin test shows a slipped disk: do not panic!

In the western world, with all the lack of movement, with all the couch potatoes and lack of activity, backaches are omnipresent. Since medical science in the foreseeable future will not be able to stop aging processes, therapy can be only symptomatic: Decompression of the spinal column by core muscle training! This is, admittedly, only one aspect of backaches, albeit an essential one. Different studies the causes of backaches consider all possible facets of human life, which can be summarized in one sentence: „A backache is always more than a pain in the back“.

Dr. St. Nolte
Head Physician at Hellersen, Hospital for injured sportlers, Member, ISSF Medical Committee
dr.no@sportkrankenhaus.de

FIGURE 4

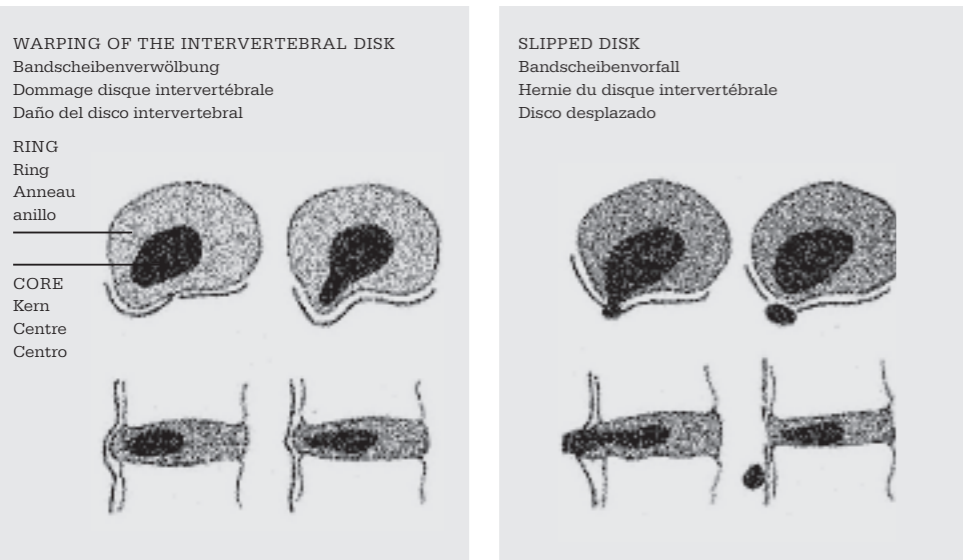
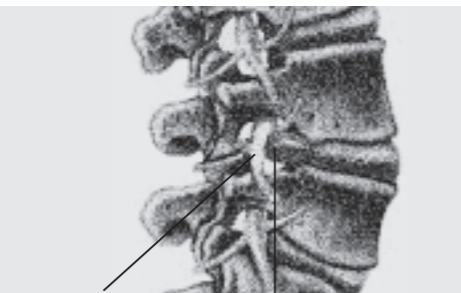


FIGURE 5



SLIPPED DISK
Bandscheibenvorfall
Hernie du disque intervertébrale
Disco desplazado

FIGURE 6



INFLAMED NERVE ROOT
Entzündete Nervenwurzel
Racine enflammée du nerf
Raíz inflamada del nervio

SLIPPED DISK
Bandscheibenvorfall
Hernie du disque intervertébrale
Disco desplazado

FIGURE 7

THE SO CALLED LUMBAR PERIDURAL INJECTION

die sog. lumbale peridurale Injektion
injection périurale lombaire
inyección lumbar peridural

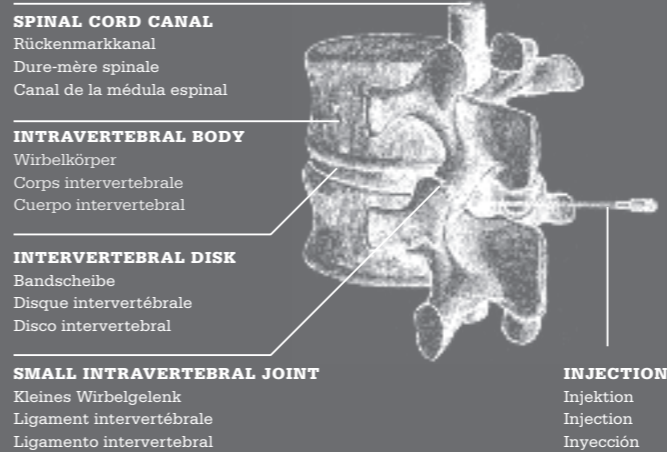
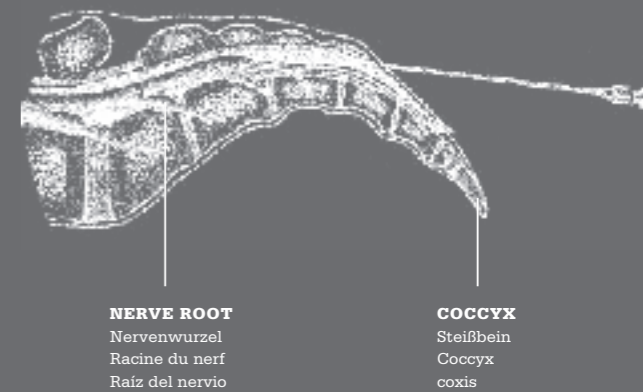


FIGURE 8

THE SO CALLED SACRAL PERIDURAL INJECTION

sog. sacrale peridurale Injektion
injection sacrale périurale
inyección sacral peridural

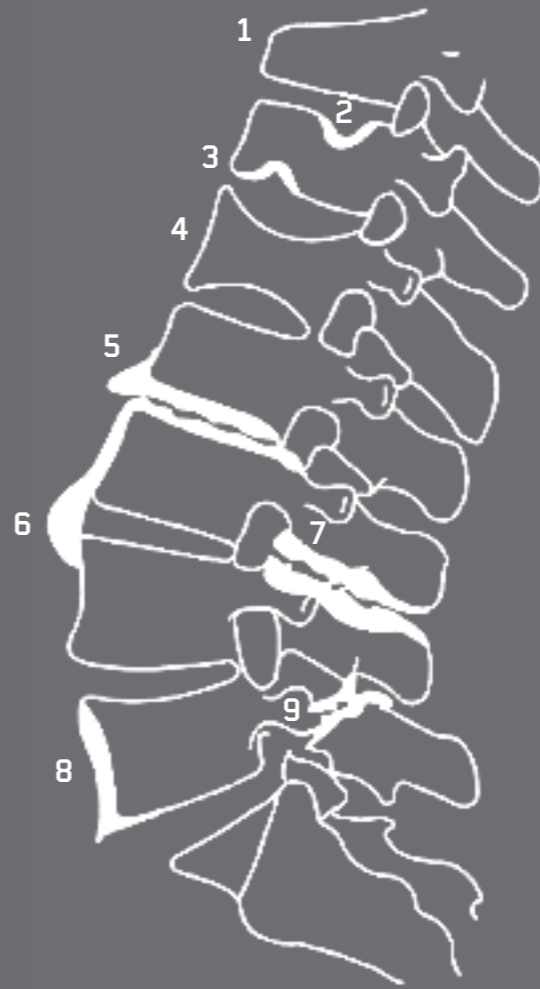


CHANGES IN WEAR AND TEAR:

VERSCHLEISSÄNDERUNGEN | CHANGEMENTS PAR USURE | CAMBIOS POR DESGASTE

TYPICAL AFFECTIONS OF THE LOWER THORACIC SPINE AND THE LUMBAR SPINE IN A LATERAL RADIOGRAPH (SCHEMATIC REPRESENTATION):

Typische Affektionen der unteren BWS und der LWS im seitlichen Röntgenbild (schematische Darstellung):
Maux t
Padecimientos típicos de la baja columna torácica y lumbar en una radiografía lateral (representación esquemática)



- SCHUEERMANN'S DISEASE: STRUCTURAL CENTRAL REDUCTION**
strukturelle ventrale Erniedrigung bei Scheuermannsche Krankheit
Maladie de Scheuermann: réduction centrale structurel
Mal de Scheuermann: reducción central estructural
- PERSISTING CHORDA TYMPANI CANAL WITH SHARPLY BOUNDED DEFECTS OF THE COVER PLATE IN THE POSTERIOR PART**
persistierender Chordakanal mit scharf begrenztem Defekt der Deckplatte im hinteren Anteil
Persistence du canal de la corde du tympane avec des défauts aigus de la plaque arrière
Persistencia del canal de la cuerda del tímpano con defectos agudos de la placa en la parte posterior
- SCHMORL'S NODE (M. SCHEUERMANN)**
Schmorlsches Knötchen (M. Scheuermann)
La note de Schmorl
La nota de Schmorl
- COD FISH VERTEBRA IN OSTEOPOROSIS**
Fischwirbel bei Osteoporose
Vertèbres de Morue en osthéoporose
Vértebras de bacalao en osteoporosis
- OSTEOCHONDROSIS**
Osteochondrose
Ostéochondrose
Osteocondrosis
- HYPERTROPHIC SPONDYLOSYNDESIS (COMPLETE CLIP)**
hypertrophe Spondylose (komplette Spange)
Spondylosyndèse hypertrophique (complète)
Espondilosis hipértrofica (completo)
- M. BAASTRUP (NEARTHROSIS OF THE SPINE OF VERTEBRA) WITH SPONDYLARTHROSIS**
M. Bastrup (Nearthrose der Dornfortsätze) mit Spondylarthrose
M. Bastrup (néarthrose de la colonne vertébrale) avec spondylarthrite
M. Bastrup (neartrós de la columna vertebral) con espondilartrosis
- SPONDYLOLISTHESIS**
Spondylolisthese
Spondylolisthèse
Espondilolistésis
- SPONDYLOLYSIS**
Spondylolyse
Spondylolyse
Espondilólisis