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LUMBAR SPONDYLOTHESIS:

WHAT IS IT? (PATHOLOGY) 1,2,3,4,7

- IN THE HUMAN SPINE THERE ARE 24 VERTEBRAE: 7 CERVICAL SPINE (NECK), 12 THORACIC SPINE (MID-BACK), AND 5 LUMBAR (LOW BACK). BETWEEN EACH VERTEBRA LIES AN INTERVERTEBRAL DISC AND TO THE SIDES OF EACH VERTEBRA ARE FACET JOINTS. THE FACET JOINTS ARE PAIRED ON EITHER SIDE OF THE SPINE. ONE POINTS UPWARD AND THE OTHER POINTS DOWNWARD, TOUCHING THE ABOVE AND BELOW SEGMENTS. THESE STRUCTURES WORK TOGETHER TO ATTENUATE COMPRESSION FORCES, PROVIDE STABILITY AND FLEXIBILITY OF THE SPINE.
- SPONDYLOLISTHESIS DESCRIBES THE FORWARD (ANTERIOR) OR BACKWARD (POSTERIOR) DISPLACEMENT OF A VERTEBRA OR THE VERTEBRAL COLUMN IN RELATION TO THE VERTEBRAE BELOW.
- THE FACET JOINTS DESCRIBED EARLIER CARRY LARGE FORCES OF COMPRESSION DURING A BACK BEND (EXTENSION), WHEREAS IN MILD FLEXION (FORWARD BEND) THEY CARRY NONE.
- AS A RESULT OF HIGH COMPRESSIVE FORCES DURING A BACKBEND, THE FACET JOINT CAN FRACTURE, LEADING TO A DISPLACEMENT OF ONE VERTEBRAL COLUMN IN FRONT OF THE OTHER.

COMMON CAUSES? (ETIOLOGY) 2,3,4,7

- THERE ARE A NUMBER OF CAUSES OF LUMBAR SPONDYLOTHESIS.
- SPONDYLOTHESIS OCCURS FREQUENTLY IN ADOLESCENTS WHO OVERTRAIN IN ACTIVITIES SUCH AS TENNIS, DIVING, MARTIAL ARTS AND GYMNASTICS. REPETITIVE AND HIGH FORCE BACK BENDS LEAD TO HIGH COMPRESSIVE FORCES TO THE FACET JOINTS AND CAN LEAD TO AN EVENTUAL FRACTURE OR SLIP OF THE VERTEBRAE.
- DEGENERATIVE SPONDYLOLISTHESIS IS A DISEASE OF THE OLDER ADULT THAT DEVELOPS AS A RESULT OF FACET ARTHRITIS. AS HUMANS AS AGE, OUR LUMBAR DISCS LOOSE FLUID AND THEIR HEIGHT DECREASES. THIS SHIFTS A GREATER AMOUNT OF THE FORCE TO THE FACET JOINT. OVER TIME THE FACET JOINTS CHANGE SHAPE FROM CONSTANT COMPRESSION AND A MILD SLIPPAGE CAN OCCUR

PREDISPOSING/ CONTRIBUTING FACTORS: 2,3,4,7

MODIFIABLE:

- PARTICIPATION IN ACTIVITIES THAT REQUIRE REPETITIVE IMPACT OR BACKBENDING (I.E. TENNIS, DIVING, MARTIAL ARTS AND GYMNASTICS)
- AN EXAGGERATED LUMBAR CURVE (EXCESSIVE LORDOSIS)
- DIABETES - DIABETICS APPEAR TO BE MORE PRONE TO DEGENERATIVE SPONDYLOLISTHESIS
- TIGHT HIP FLEXOR MUSCULATURE, WEAK GLUTEAL AND LOWER ABDOMINAL MUSCULATURE

NON-MODIFIABLE:

- AGE - MOST COMMONLY OCCURS DURING ADOLESCENT GROWTH SPURTS
- GENDER - FEMALES ARE FOUR TIMES MORE LIKELY TO DEVELOP SPONDYLOLISTHESIS THAN MALES
- PREGNANCY MAY BE A RISK FACTOR
- OSTEOARTHRITIS - CAN LEAD TO DEGENERATIVE SPONDYLOLISTHESIS IN OLDER PEOPLE
- TRAUMATIC INJURY - AN INJURY THAT DOES NOT HEAL PROPERLY IN AN ADOLESCENT CAN PROGRESS TO SPONDYLOLISTHESIS

WHAT DOES IT FEEL LIKE? (SIGNS AND SYMPTOMS)

LOWER BACK PAIN

LOWER BACK STIFFNESS

PAIN IN THE BUTTOCKS

LOCALIZED PAIN OR TENDERNESS IN THE BACK JUST ABOVE THE PELVIS

MOVEMENT/ACTIVITY THAT MAY CAUSE MORE PAIN:

- BACKBENDING
- BACKBENDING WHILE ROTATING
- PROLONGED STANDING
- HIGH IMPACT AEROBIC OR ANAEROBIC ACTIVITY SUCH AS RUNNING OR JUMPING
- HEAVY RESISTANCE TRAINING

EXERCISES TO AVOID:

REPEATED BACK BENDS
COBRA POSE
REVERSE BRIDGE/TABLETOP
KETTLE BELL SWINGS

EXERCISES TO DO:

MOBILITY:
SUPINE KNEE TO CHEST
HIP FLEXOR STRETCH IN POSTERIOR PELVIC ROTATION

ABDOMINAL STRENGTH:

POSTERIOR PELVIC ROTATION STANDING AND SUPINE (FOCUSING ON LOWER ABDOMINALS)
DEAD BUG 1/2/3
BENT KNEE FALLOUTS

GLUTEAL STRENGTH:

BENT OVER HIP EXTENSIONS (IN NEUTRAL SPINE)
SINGLE LEG STEP UPS ONTO 2-12" BOX/STEP WITH PRESSURE IN THE HEEL

HELP YOURSELF (PREVENTION)

- MOST PATIENTS WITH SPONDYLOTHESIS RESPOND WELL TO CONSERVATIVE THERAPY, INCLUDING LIMITED BED REST AND EXERCISE.
- AVOIDANCE OF HIGH IMPACT ACTIVITIES AND ACTIVITIES THAT PROMOTE REPETITIVE BACK BENDING WILL LEAD TO A DECREASE IN SYMPTOMS. ALTHOUGH THEY WILL NOT REVERSE A SLIPPAGE OF THE SPINE.
- ABDOMINAL AND GLUTEAL STRENGTHENING IN A NEUTRAL SPINAL POSITION WILL PROMOTE STABILITY AND CREATE AN ENVIRONMENT WHERE FURTHER SLIPPAGE CAN BE PREVENTED.
- BACK BRACES CAN BE WORN IN THE EARLY PAINFUL STAGES OF THE INJURY TO DECREASE COMPRESSIVE FORCES ON THE SPINE. EVENTUALLY YOU WILL NEED TO USE YOURS MUSCLES TO CREATE STABILITY. 5
- MAINTAIN A TIGHT CORE TO ASSIST WITH LUMBAR SPINE STABILIZATION WHILE SITTING, LIFTING, AND DAILY ACTIVITIES

CALL YOUR DOCTOR IF...

CONSULT YOUR PHYSICIAN IMMEDIATELY IF YOU EXPERIENCE RADIATING PAIN, NUMBNESS AND TINGLING DOWN BOTH LEGS.
GENITAL/ INNER THIGH NUMBNESS AND TINGLING
LOSS OR CHANGE IN BOWEL AND BLADDER CONTROL
LOSS OF LEG STRENGTH OR CONTROL
CONSTANT UNRELENTING PAIN
UNEXPLAINED WEIGHT LOSS OR WEIGHT GAIN, AGE > 50 Y.O., WITH A PERSONAL OR FAMILY HISTORY OF CANCER.

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