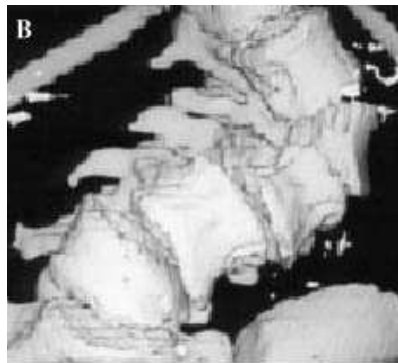


Investigation of Spine

- Passive motion analysis
- Reflex analysis
- X-Ray analysis (1)
- Computertomography (CT) (2)
- Magnetic resonance(MR) (3)
- Photography using Moire method (4)



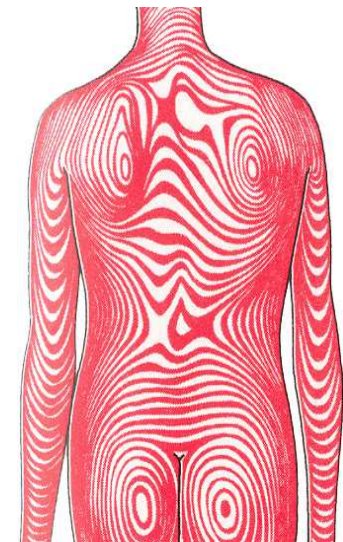
1



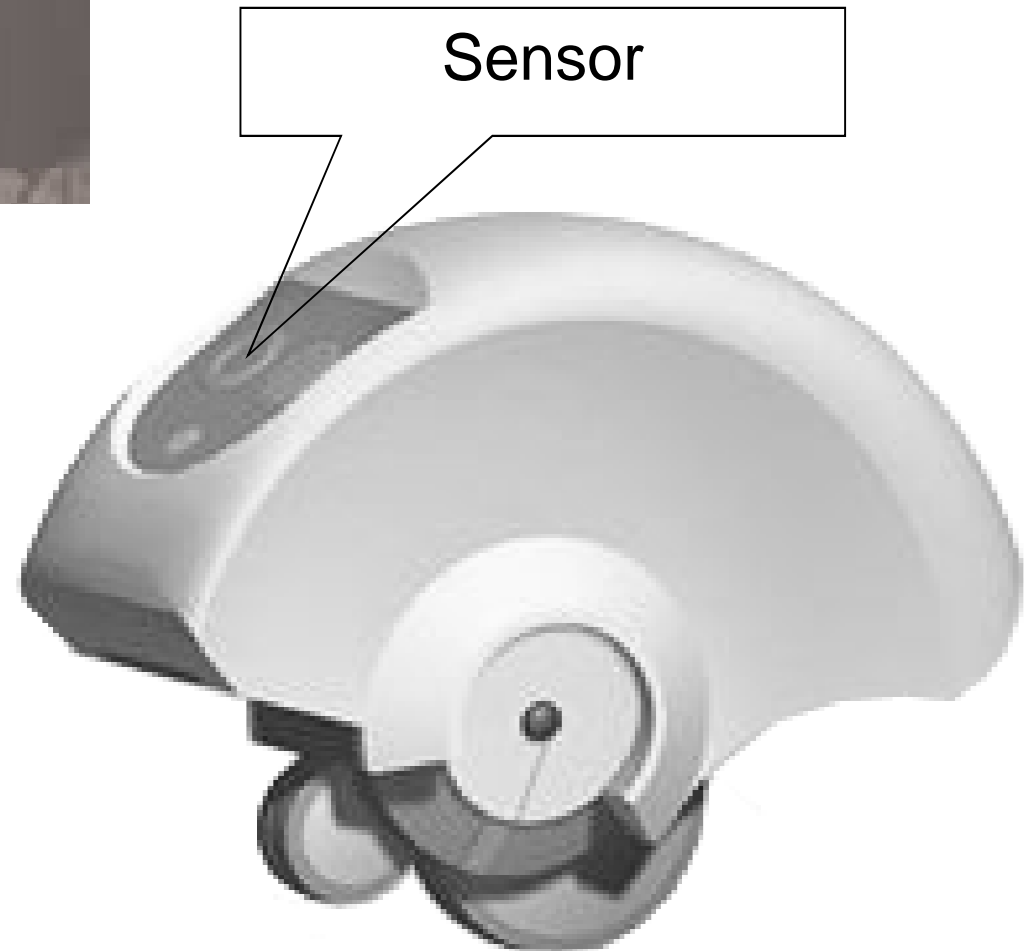
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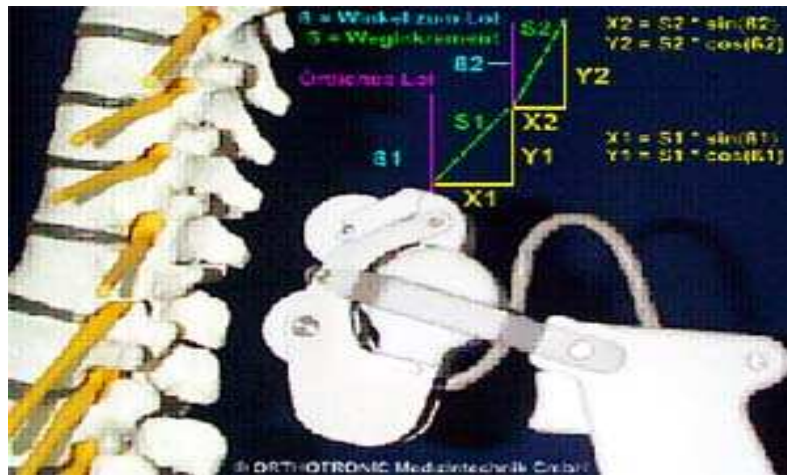
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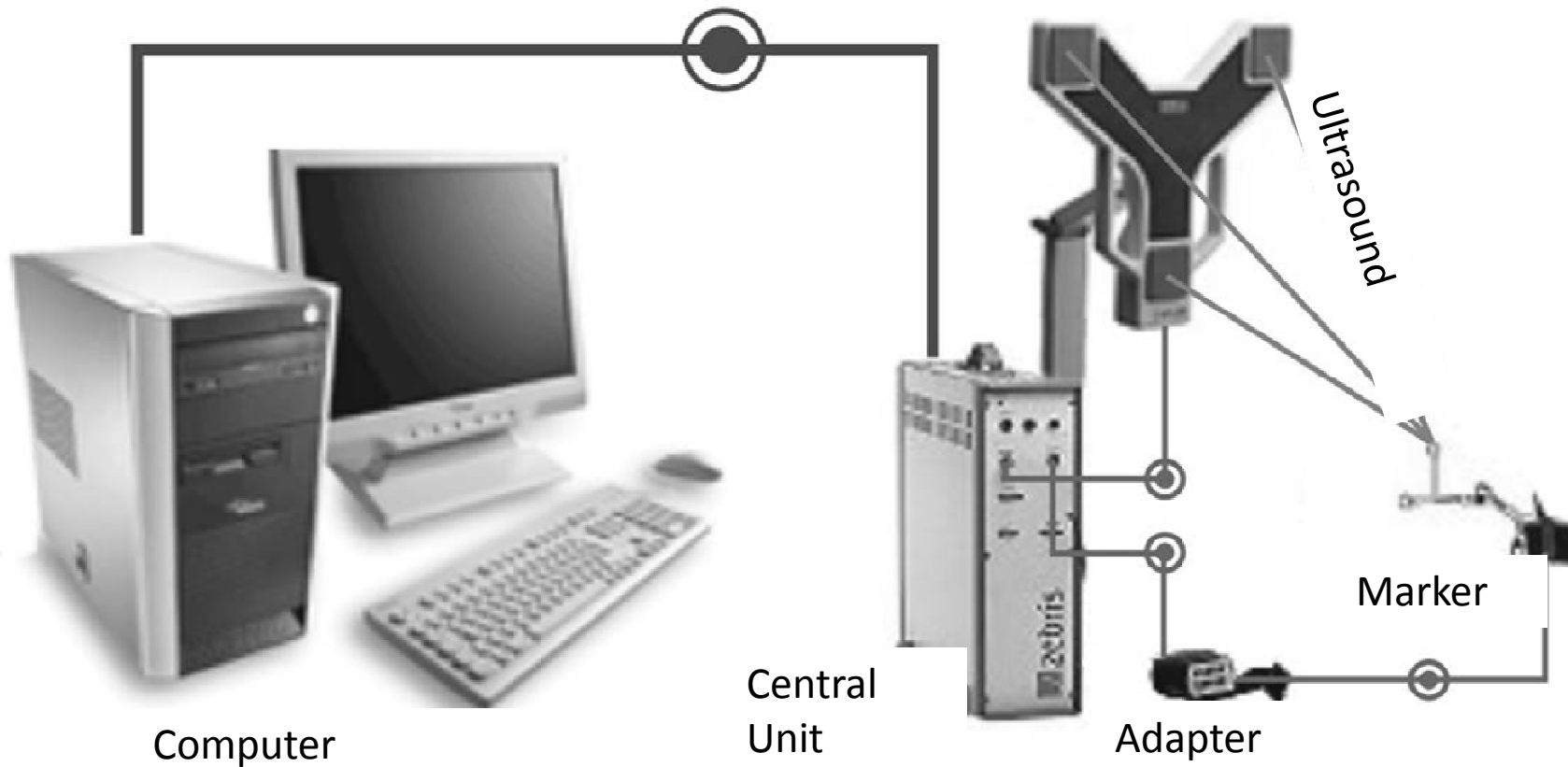
Spinal mouse



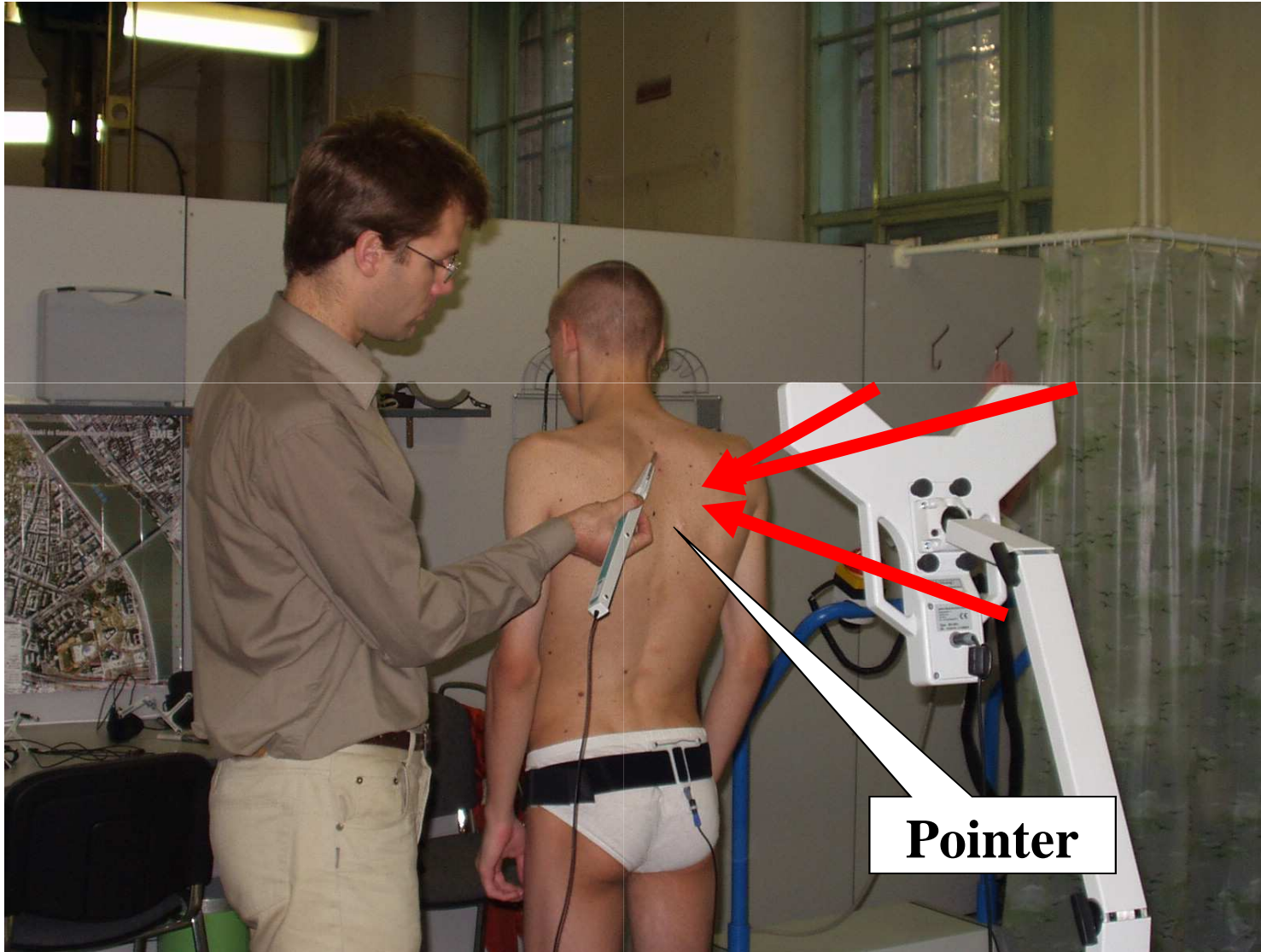
Triflexiometer (electronic-way)



ZEBRIS Ultrasound-based System

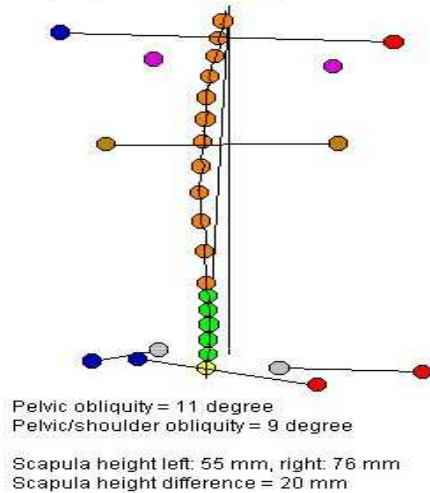


Determination of the shape of the spine



Determination the Shape of the Spine-Results

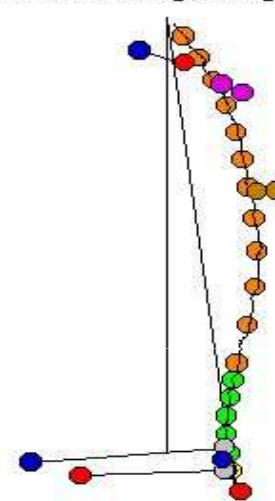
Upright Standing, Frontal Prj



T1	= -2.7°
T2	= 0.9°
T3	= 0.5°
T4	= -3.9°
T5	= -3.1°
T6	= 1.0°
T7	= -1.0°
T8	= -0.9°
T9	= -5.6°
T10	= -0.6°
T11	= 0.7°
T12	= -0.5°
L1	= 1.0°
L2	= 1.6°
L3	= 2.2°
L4	= 1.1°
L5	= 1.1°
SCR	= 3.9°

Relative Angles

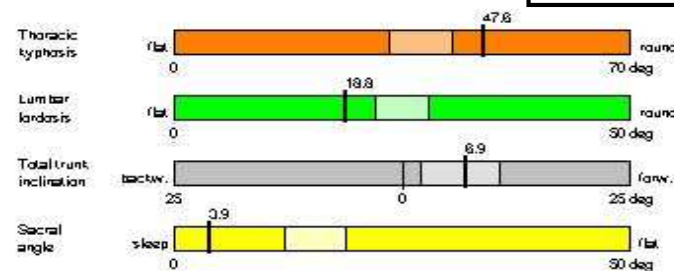
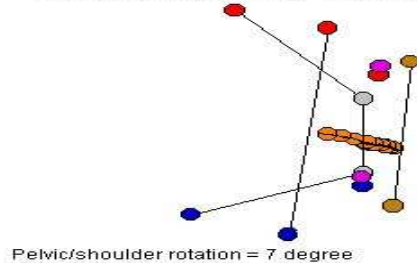
Upright Standing, Sagittal Prj



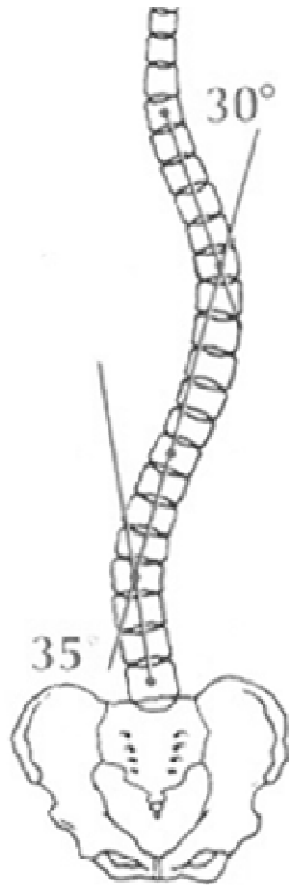
T1	= 4.5°
T2	= 3.5°
T3	= 4.0°
T4	= 6.1°
T5	= 6.2°
T6	= 1.4°
T7	= 1.4°
T8	= 4.6°
T9	= 7.8°
T10	= 5.6°
T11	= 3.1°
T12	= -0.6°
L1	= -1.0°
L2	= -3.3°
L3	= -7.2°
L4	= -7.4°
L5	= 0.1°
SCR	= 3.9°

Normalized Datas

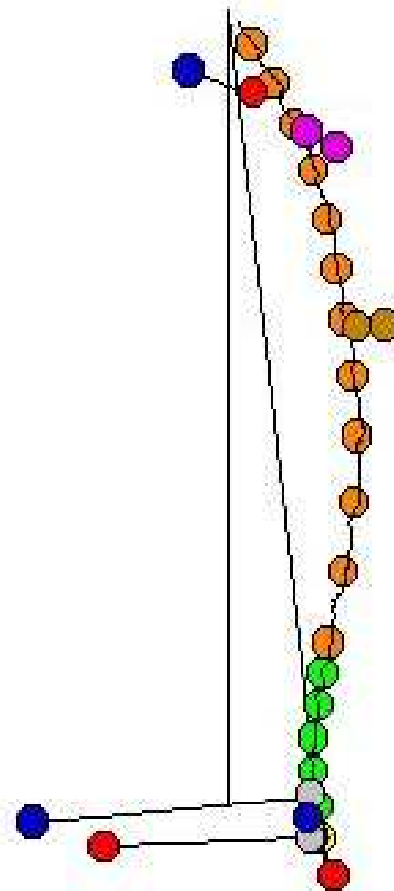
Upright Standing, Transversal Prj



Analysis, Data processing

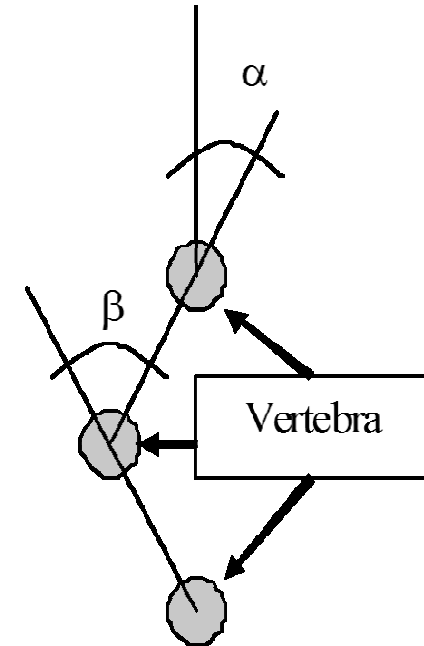


Traditional way



T1	= 4.5°
T2	= 3.5°
T3	= 4.0°
T4	= 6.1°
T5	= 6.2°
T6	= 1.4°
T7	= 1.4°
T8	= 4.6°
T9	= 7.8°
T10	= 5.6°
T11	= 3.1°
T12	= -0.6°
L1	= -1.0°
L2	= -3.3°
L3	= -7.2°
L4	= -7.4°
L5	= 0.1°
SCR	= 3.9°

CMS-HS



α, β stb. relative angles
PS-fok

Determination of the boundaries of motion

Flexion/Extension, Sagittal Prj

Lateral Flexion, Frontal Prj

Straight standing

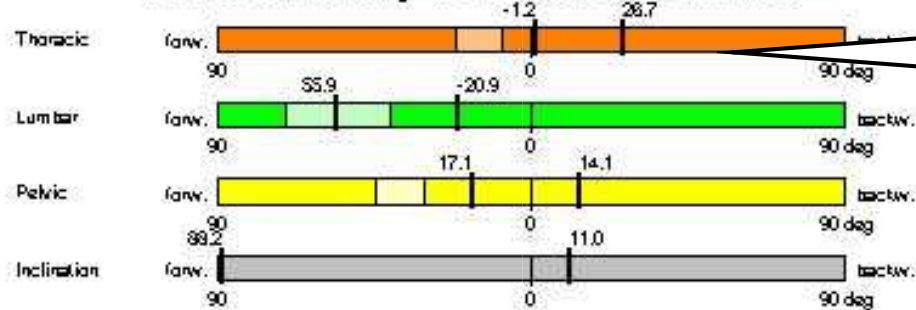
Extension

Flexion

Side-flexion

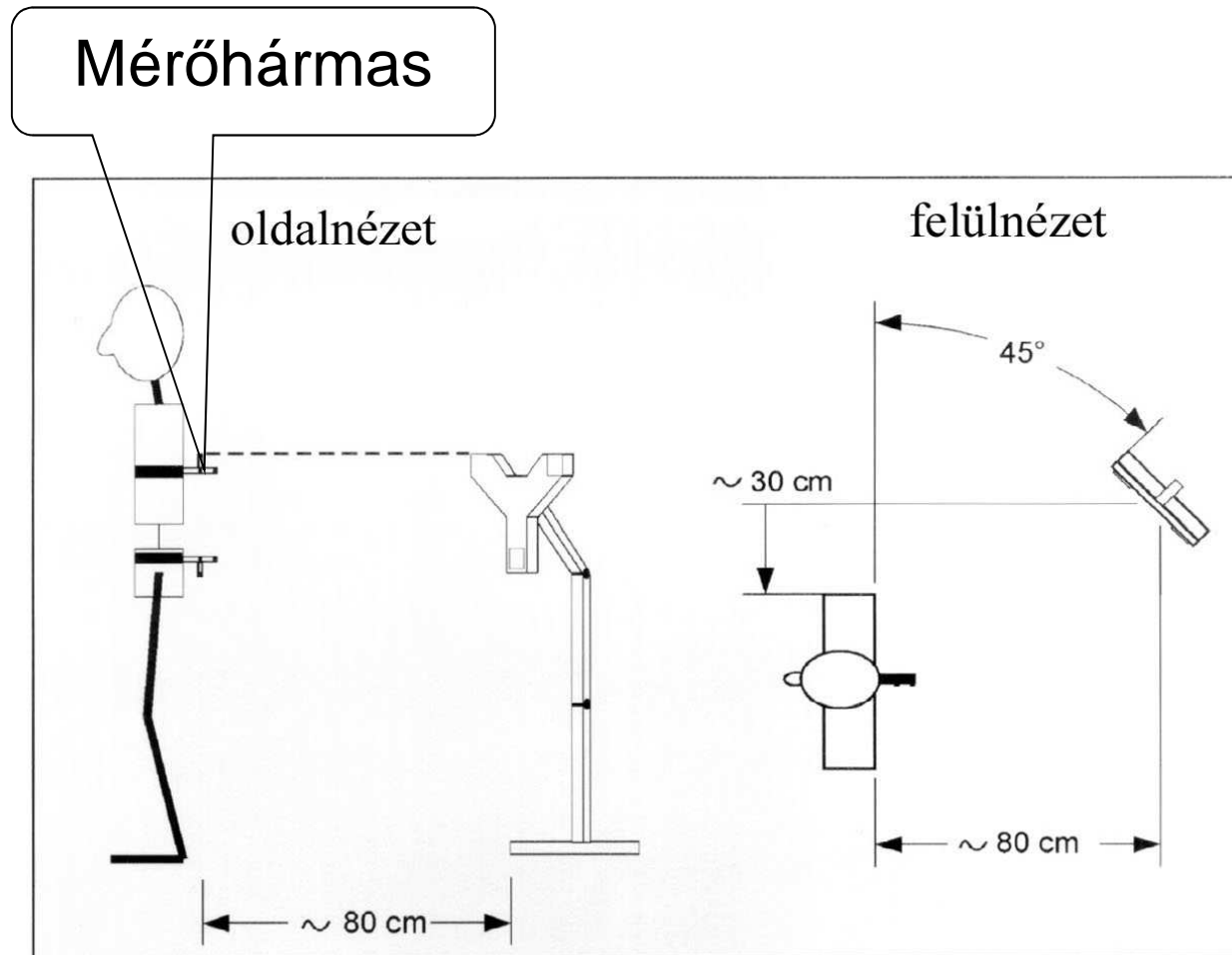
Flex.: Length increase 13 mm
Ext.: Length decrease 53 mm

Total Mobility Flexion/Extension

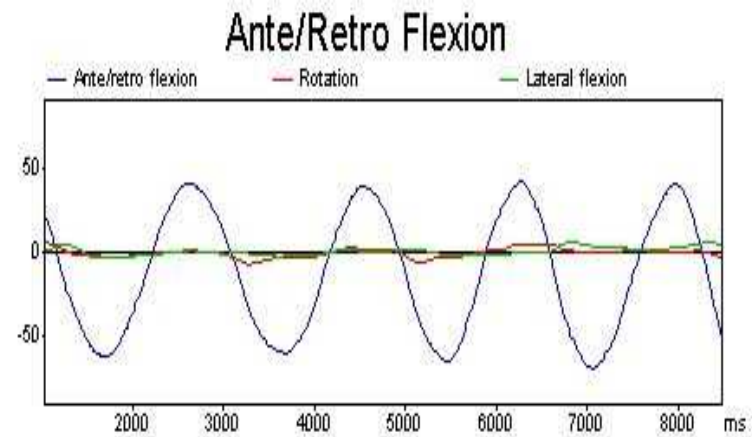
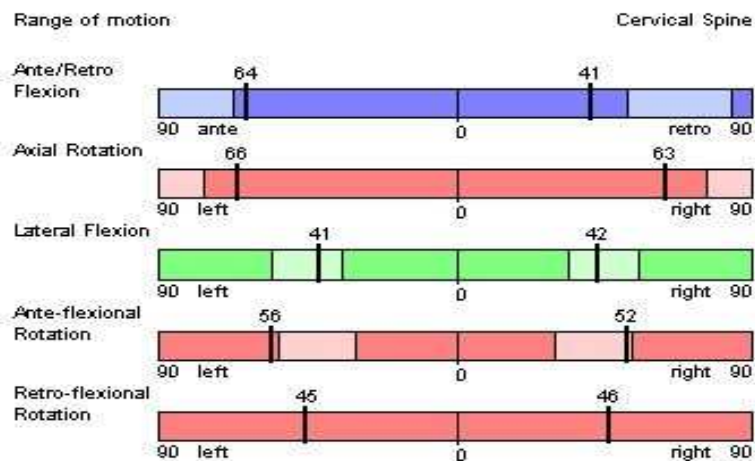
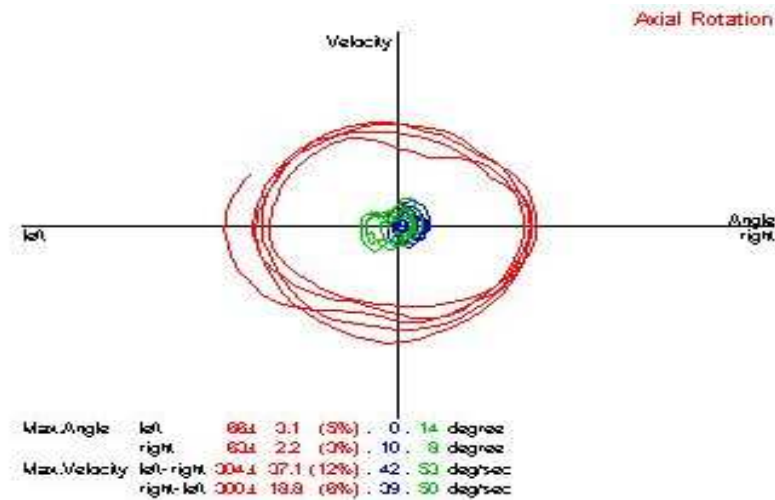
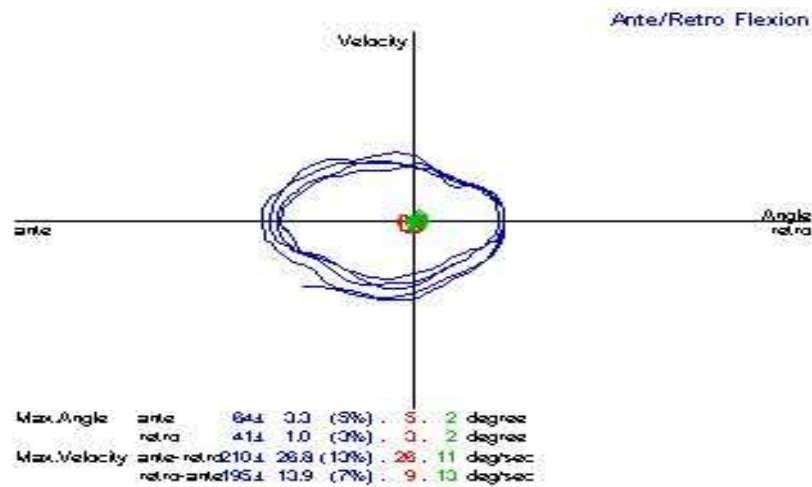


Normalized Datas

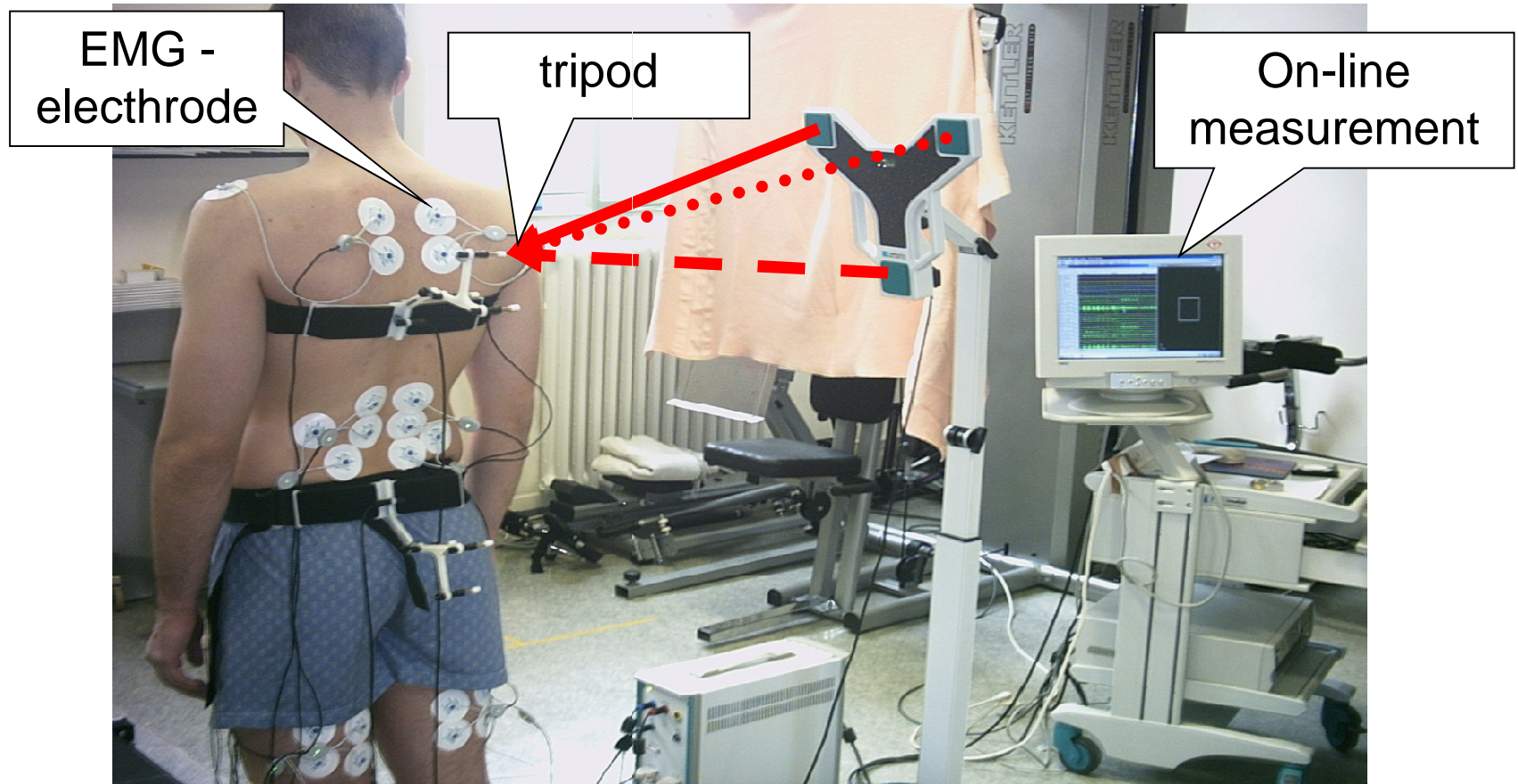
Mozgékonyság vizsgálata



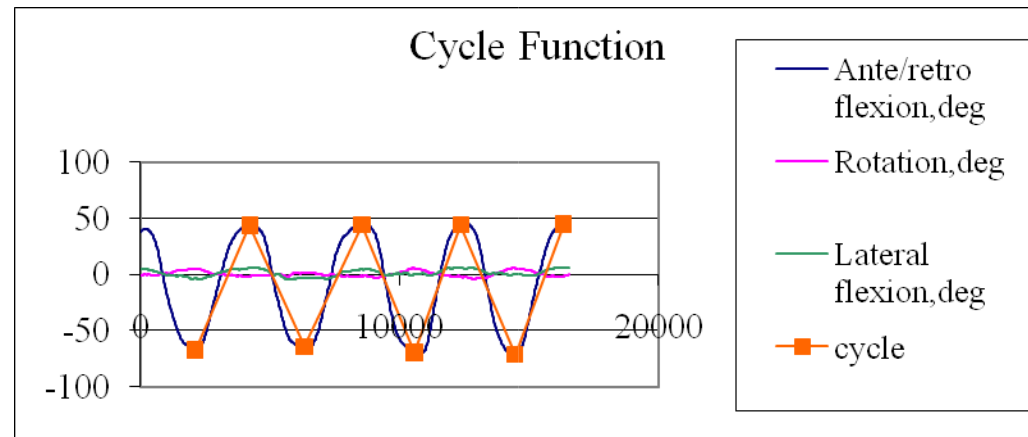
Mozgékonyosság vizsgálata - Eredmények



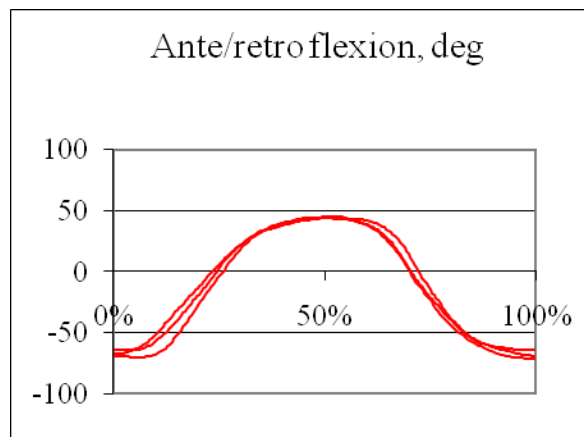
Coupling spine and EMG measurement



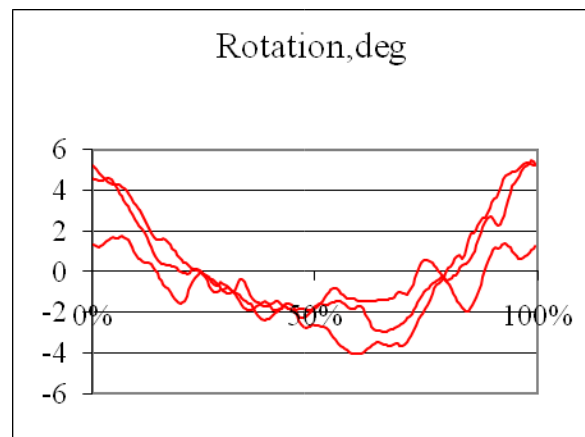
Results



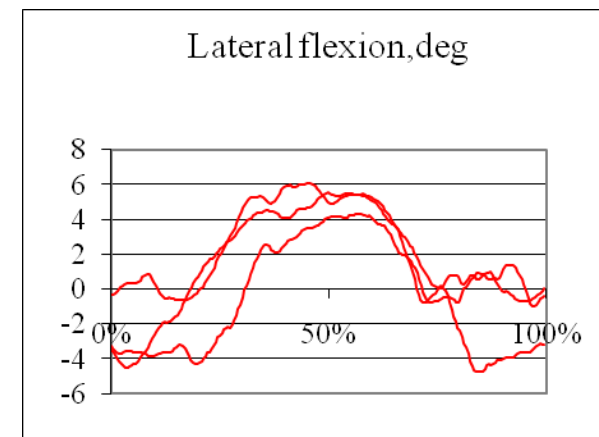
Determination of cycles



forward-backward



Torsion of trunk during
back and forward flexion



Flexion of trunk during
back and forward flexion

Conclusion

- A mozgásvizsgáló rendszerek jól használhatók a gerinc alakjának meghatározására.
- A gerinc alakjának megváltozásának vizsgálatával szükséges a gerinc körüli izmok vizsgálata is.
- The motion analysis systems are useful in the determination of the shape of the spine.
- During the examination of the spine the examining of the muscles nearby the spine is required