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Tensiomyography (TMG)

Measurements results

MS20071108142740.TXT

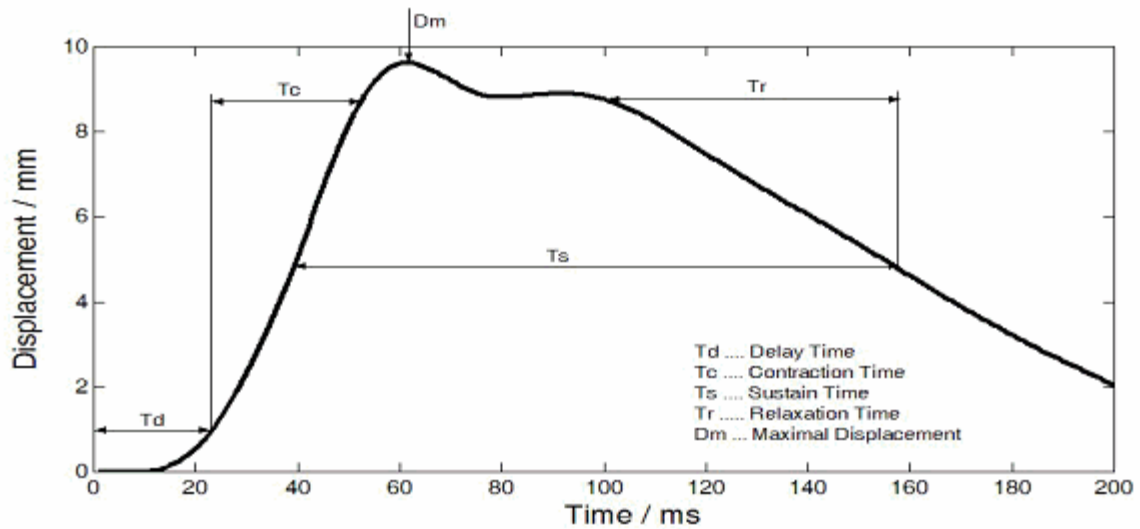
Ljubljana

Nov 8 2007 2:27PM

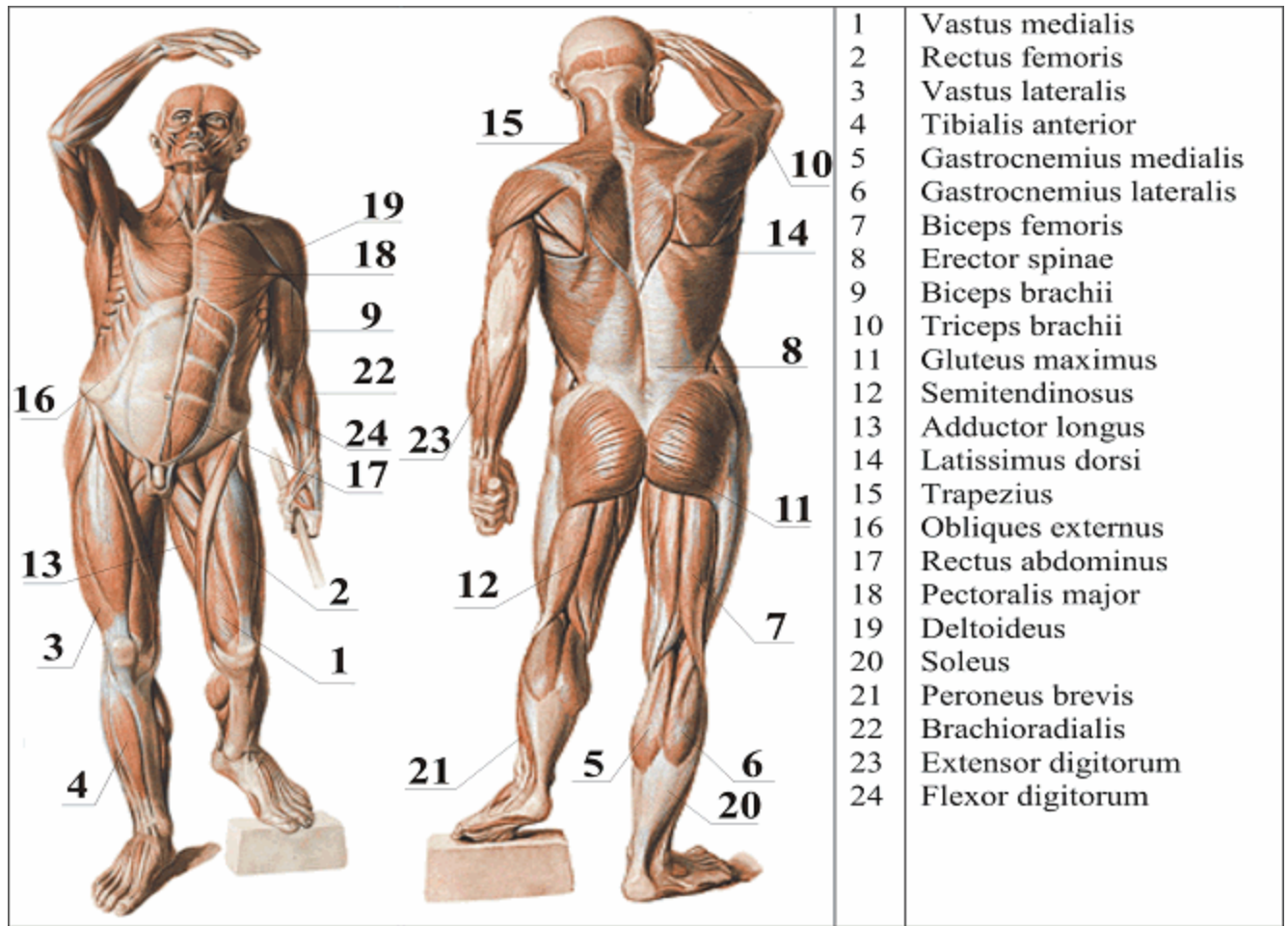
INTRODUCTION

Tensiomyography (TMG) is a method for detecting skeletal muscle contractile properties. It enables selective measurements of radial muscle belly enlargements in a single muscle head. The muscle is stimulated with a single electrical stimulus; measurements are carried out under isometric conditions. The measured signal correlates with muscle composition and represents the mechanical response of the skeletal muscle system. TMG is the only method providing information of the muscle contraction speed.

PARAMETERS DEFINITIONS



MUSCLE LEGEND



Subject: MS20071108142740.TXT
Date / Time: 08/11/2007 14:27:40
Sex: Male

Age: 16
Height: 186
Weight: 75

Diagnosis: Healthy
Sport: Football - defense

Lateral symmetry:

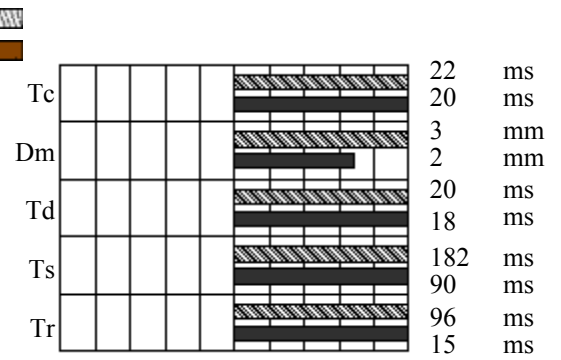
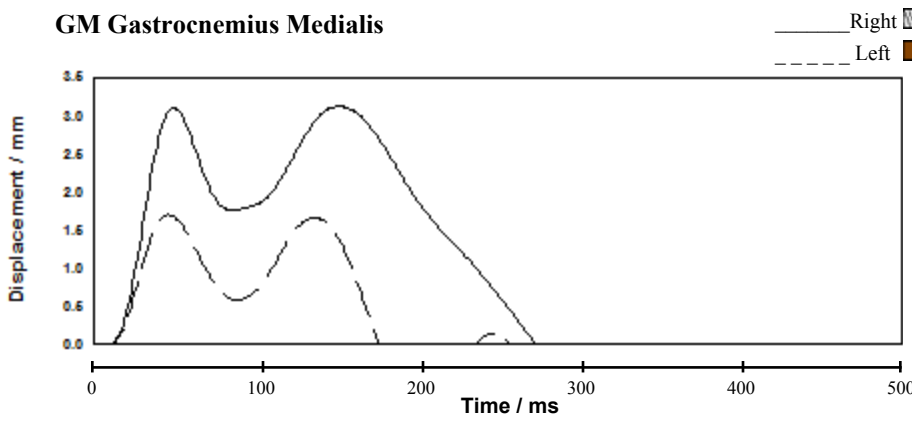
Muscle	Side	Tc [ms]	Dm [mm]	Td [ms]	Ts [ms]	Tr [ms]	Symm [%]
m.VM	R	24.3	8.3	21.8	187.2	45.2	94
m.VM	L	22.1	8.3	20.6	191.1	38.7	94
m.RF	R	29.7	8.7	22.1	126.6	73.8	75
m.RF	L	43.2	11.1	22.8	146.3	93.8	75
m.VL	R	19.9	4.7	18.1	127.9	96.7	91
m.VL	L	20.0	6.4	18.6	173.1	36.1	91
m.TA	R	26.8	2.8	19.6	152.0	61.6	89
m.TA	L	30.3	3.2	21.5	137.7	42.1	89
m.GM	R	22.2	3.1	19.8	181.7	96.4	80
m.GM	L	20.4	1.7	18.4	90.3	15.4	80
m.GL	R	22.0	3.7	19.1	157.1	40.8	66
m.GL	L	41.6	2.9	19.1	136.6	32.0	66
m.BF	R	24.9	8.0	23.3	191.8	53.9	90
m.BF	L	25.8	5.7	24.3	233.0	98.8	90
m.ES	R	22.7	2.5	19.7	957.2	925.8	77
m.ES	L	20.6	1.5	21.9	167.5	136.3	77

Functional symmetry:

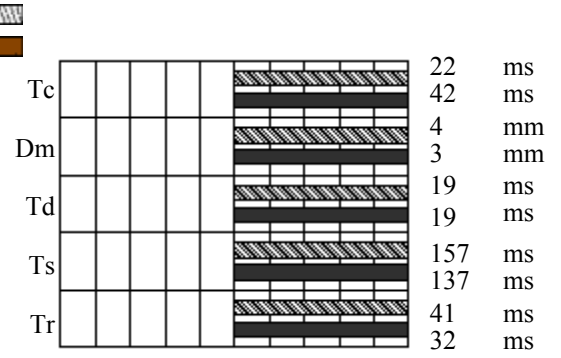
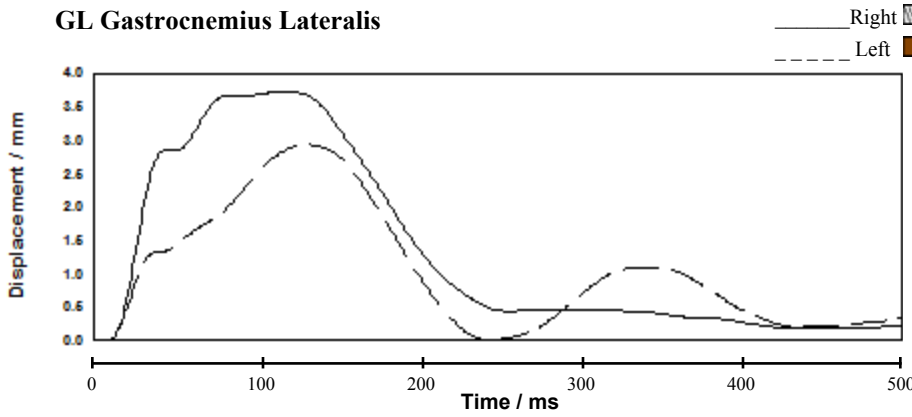
		Symm [%]		Symm [%]	
Elbow:(BB/TB)	R		Knee:(VL&VM&RF/BF)	R	96
	L			L	88
Achill tendon:(GL/GM)	R	97	Ankle:(TA/GL&GM)	R	85
	L	56		L	95
Lig. Patellae:(VM/VL)	R	81	Leg:(VL&VM/GL&GM)	R	99
	L	91		L	70

Estimation of harmonization between agonistic and antagonistic muscles, synergistic muscles, and same muscles on left and right side of the body, is based on muscles biomechanical properties i.e. parameters, calculated from TMG response. Total harmonization (100%) is hardly ever the case, the lowest level of sufficient muscle groups functionality is defined by 80% for lateral and 65% for agonistic/synergistic harmonization. Harmonization below this level either reflects past injuries, muscle adaptation, etc. or indicates increased exposure to injury.

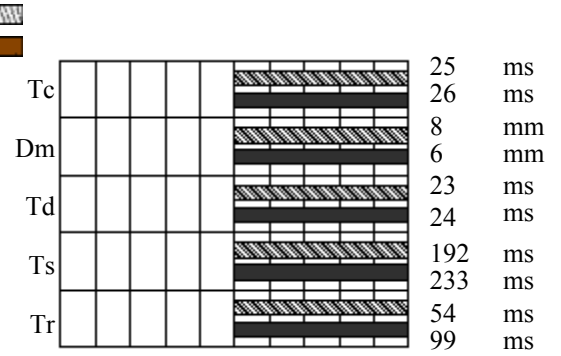
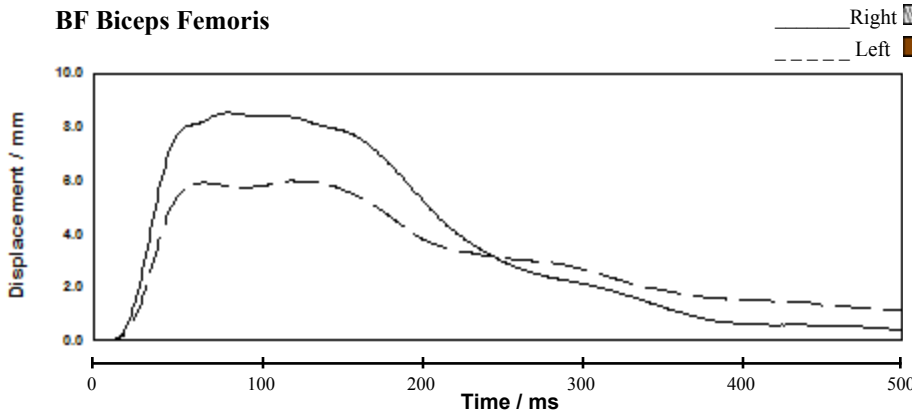
GM Gastrocnemius Medialis



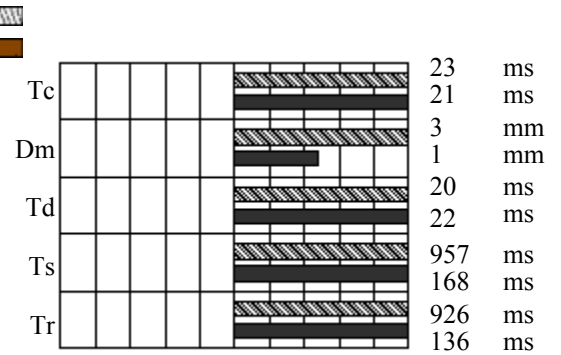
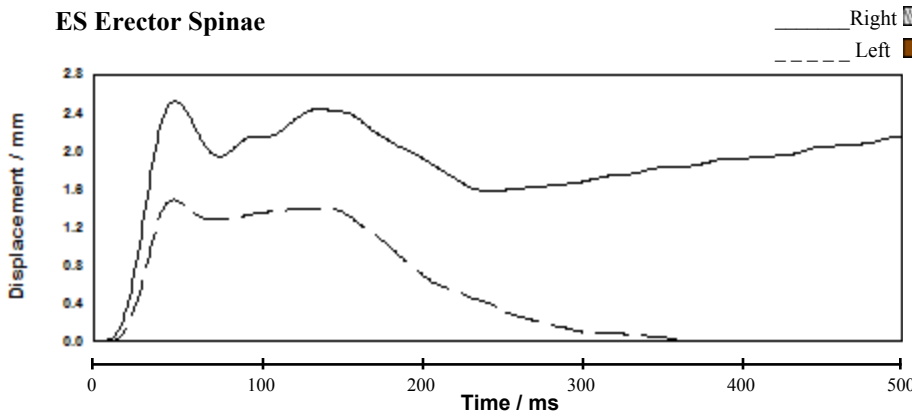
GL Gastrocnemius Lateralis



BF Biceps Femoris



ES Erector Spinae



INTERPRETATION:

LATERAL SIMMETRY (LS):

VM Vastus Medialis

General vastus medialis (VM) muscle LS is very high (94%).

The muscle is significantly slower than selected sport average.

RF Rectus Femoris

General rectus femoris (RF) muscle LS is slightly lower than recommended (75%).

LS of contraction time is significantly lower than recommended. Slower is the muscle on the left side.

The muscle is significantly slower than selected sport average.

We recommend activation exercises for both sides with emphasis on the left one.

VL Vastus Lateralis

General vastus lateralis (VL) muscle LS is very high (91%).

The muscle is significantly slower than selected sport average.

TA Tibialis Anterior

General tibialis anterior (TA) muscle LS is sufficiently high (89%).

The muscle is significantly slower than selected sport average.

GM Gastrocnemius Medialis

General gastrocnemius medialis (GM) muscle LS is sufficiently high (80%).

LS of maximal displacement is significantly lower than recommended. It is lower on the left side.

The muscle is significantly slower than selected sport average.

We recommend activation exercises for both sides.

GL Gastrocnemius Lateralis

General gastrocnemius lateralis (GL) muscle LS is significantly lower than recommended (66%).

LS of contraction time is significantly lower than recommended. Slower is the muscle on the left side.

The muscle is significantly slower than selected sport average.

We recommend activation exercises for both sides with emphasis on the left one.

BF Biceps Femoris

General biceps femoris (BF) muscle LS is very high (90%).

The muscle is significantly slower than selected sport average.

ES Erector Spinae

General erector spinae (ES) muscle LS is slightly lower than recommended (77%).

LS of maximal displacement is significantly lower than recommended. It is lower on the left side.

The muscle is significantly slower than selected sport average.

We recommend activation and strength exercises for both sides.