Function and Prognostic Scores of de Bie et al for a Patient with a Lateral Ankle Sprain

Overview:

de Bie et al developed a function and prognostic score for a patient with a lateral ankle sprain. This can help determine the probably outcome for the patient. The authors are from the Universitiy of Maastricht in The Netherlands.

Evaluation:

(1) functional score based on the score of Lysholm and Gillquist for the knee (see above)

(2) report mark for injury severity a VAS anchored at 0 (normal) and 10 (most severe)

(3) palpation and stress test

Function score components:

(1) pain

(2) instability

(3) weight bearing

(4) swelling

(5) gait pattern

Parameter	Finding	Points
pain	none	35
	during sports	30
	during running on a non-level surface	25
	during running on a level surface	20
	during walking on a non-level surface	15
	during walking on a level surface	10
	while carrying load	5
	constant pain	0
instability	none	25
	sometimes during sports (less than once a day)	20
	frequently during sports (daily)	15
	sometimes during activities of daily living ADL (less than once a day)	10

	frequently during ADL (daily)	5
	with every step	0
weight bearing	jumping	20
	standing on toes of injured leg	15
	standing on injured leg	10
	standing on two legs	5
	none	0
swelling	none	10
	light	6
	mild	3
	severe	0
gait pattern	running	10
	normal gait	6
	mild limp	3
	severe limp	0

total function score =

= SUM(points for all 5 parameters)

The maximum total function score is 100 points which indicates normal function.

The description of the palpation and stress test is somewhat limited:

> (1) It is based on evaluation of the "three lateral ligaments" which are presumptively the anterior talofibular calcanofibular and posterior talofibular although this is not stated.
>
> (2) The score range is 0 to 12 points (from page 287).
>
> (3) Testing involves determining the most painful area by means of a pressure gauge and manual stress on the 3 lateral ligaments. The nature of the stress test is not given put presumably is due to flexing the specific ligament.
>
> (4) In Table 2 page 287 reference is made to "> 2 painful points" and "> 2 ligaments painful on stress".
>
> Based on this data I have come up with the following scoring method:

Palpation and Stress Test	**Finding**	**Points**

palpation of anterior talofibular ligament	no pain	0
	mild to moderate pain	1
	severe pain	2
stress test of the anterior talofibular ligament	no pain	0
	mild to moderate pain	1
	severe pain	2
palpation of calcanofibular ligament	no pain	0
	mild to moderate pain	1
	severe pain	2
stress test of the calcanofibular ligament	no pain	0
	mild to moderate pain	1
	severe pain	2
palpation of posterior talofibular ligament	no pain	0
	mild to moderate pain	1
	severe pain	2
stress test of the posterior talofibular ligament	no pain	0
	mild to moderate pain	1
	severe pain	2

total score for palpation and stress test =

= SUM(points for all 6 components)

X = (0.34 * (initial palpation and stress test score)) – (0.07 * (initial function score)) + (0.54 * (initial report mark) – 0.81 probability of cure within 4 weeks = 1 / (1 + EXP(X))

References:

de Bie RA de Vet HCW et al. The prognosis of ankle sprains. Int J Sports Med. 1997; 18: 285-289.