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Frequent pain and injuries among long distance triathletes and their potential risk factors

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Introduction:

Extensive training is vital in order to participate in long distance triathlon. Triathletes experience pain and suffer various injuries throughout their career. The aim of this study was to investigate the frequency and the kind of pain and injuries triathletes suffer while training and competition. Furthermore, this study intends to identify the risk factors which are most commonly related to, and responsible for, the most frequently occurring injuries and forms of trauma and pain.

Methods:

The link to the online-questionnaire - which had been translated into 5 languages - was sent to 30.000 athletes between July 2011 and February 2012. Of those, 1158 (990 men, 168 women) athletes from 43 nations, with a mean age of 41 years (SD=8,9 years), answered the questionnaire correctly. Table 1 shows characteristics of the sample.

Table 1: General information (mean)

	M	W
age (year)	41,07	39,46
height (cm)	179,85	167,28
weight (kg)	75,26	59,69
participation	3,63	3,50
participation/year	1,18	1,21
active time (year)	6,41	6,83
total time (h)	11,24	12,10
Swimsplit (h)	1,12	1,14
Bikesplit (h)	5,44	6,10
Runsplit (h)	4,09	4,26

Table 2: Sessions/week (mean)

	M	W
strenght-upper body	0,98	1,21
strenght-core	1,22	1,89
strenght-lower body	0,82	1,14
general stability	0,61	1,14
stretching/movement shoulder	0,77	0,83
stability/equality. shoulder	0,54	0,89
stretching/movement for bike	0,67	0,85
stability/equality for bike	0,30	0,55
stretching/movement for run	1,33	1,55
stability/equality for run	0,44	0,81

Results:

Specific training volume, as well as strength, stability and flexibility training, is higher among women than men. While nearly 50% of the participants ignore any kind of equality, stability and strength training at all, the remaining 50% work on these areas but less than once a week (table 2). Difference in leg length occurs simultaneously frequent ($p<0,05$) with low back problems, runner´s knee, achillodynia and iliotibial band syndrome. The same is shown concerning the last two injuries and fasciitis plantaris with running shoes, which are not custom fit. Figures1-3 show frequent problems of the three disciplines.

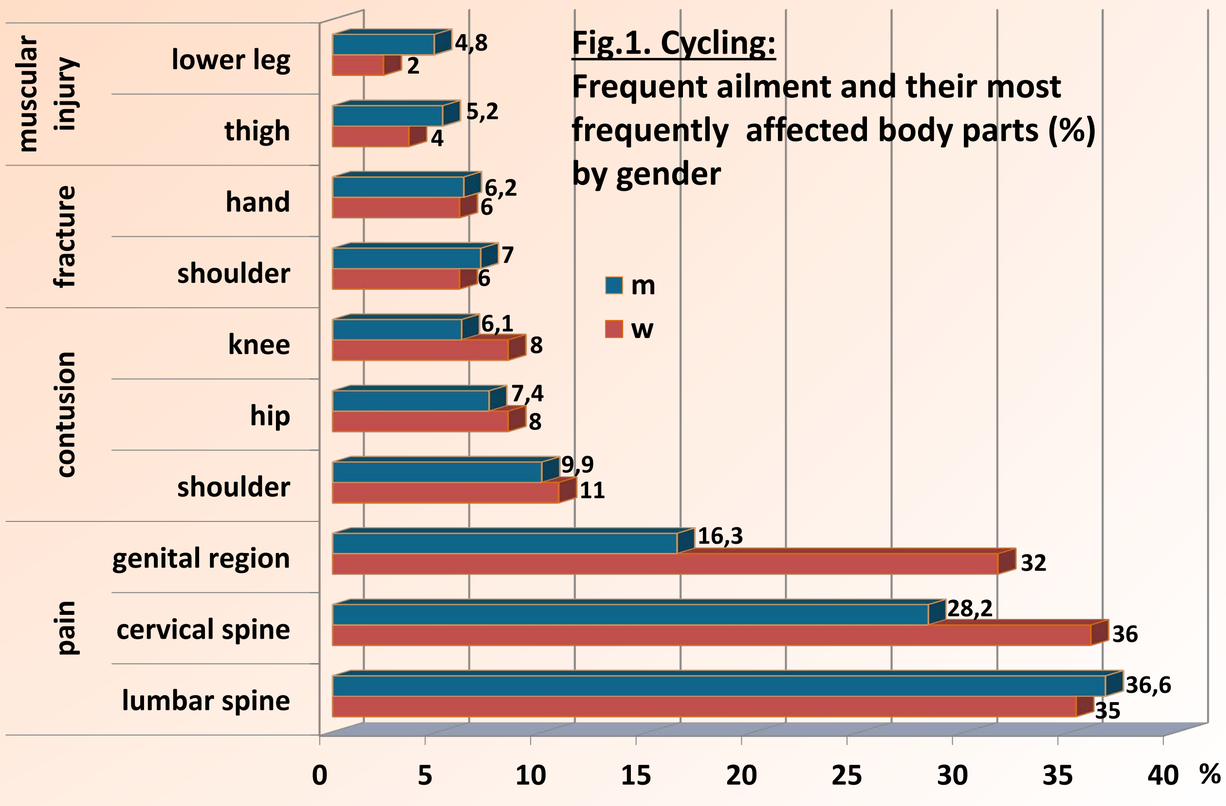
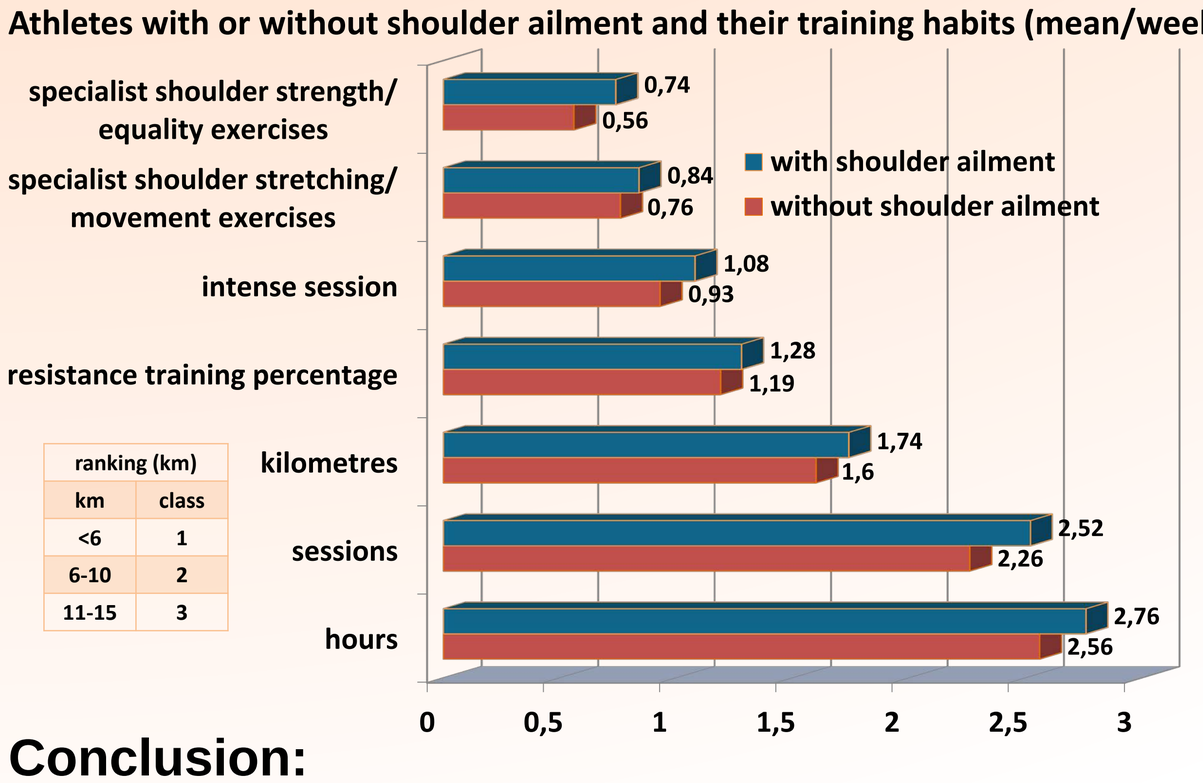


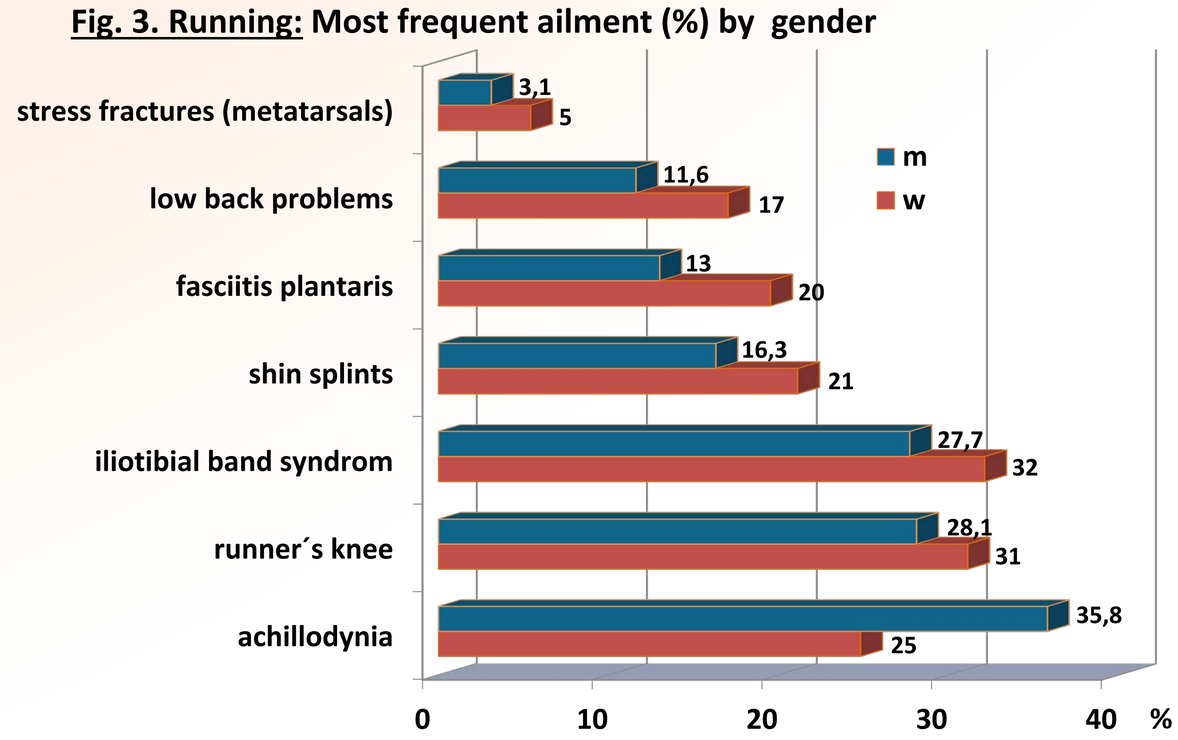
Fig.1. Cycling:
Frequent ailment and their most frequently affected body parts (%) by gender

Fig. 2. Swimming:
Athletes with or without shoulder ailment and their training habits (mean/week)



ranking (km)	
km	class
<6	1
6-10	2
11-15	3

Fig. 3. Running: **Most frequent ailment (%) by gender**



Conclusion:

In order to plan the training of competitive triathletes appropriately, the athletes physical pre-conditions have to be taken into consideration, as well as the, often extreme and highly specific, volume. Furthermore, it has to be said that it is very important to treat symptoms, which might occur during the training, seriously in order to prevent the development of chronic pain and injuries.

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