



SAPIENZA
UNIVERSITÀ DI ROMA



I BAMBINI E LO SPORT



Pietro Persiani

Clinica Ortopedica

"Sapienza Università di Roma"



BAMBINI O PICCOLI ATLETI? IL PUNTO DI VISTA DELL'ORTOPEDICO



“MALI” della SOCIETA’

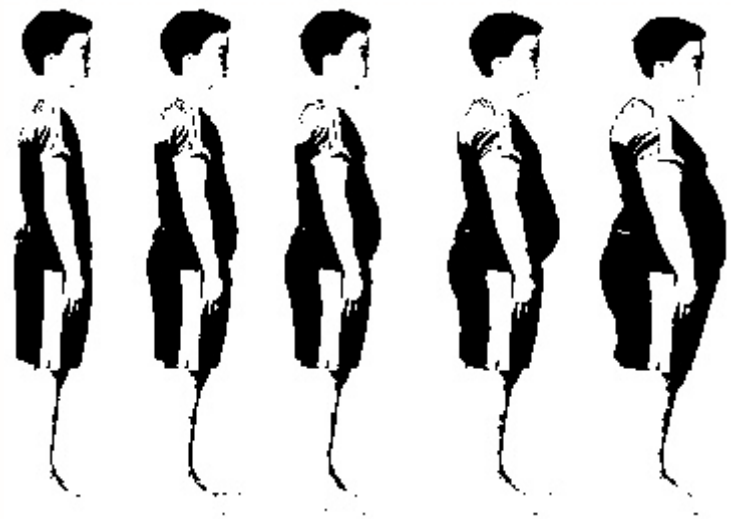


(DHHS & DOE, 2000)

“MALI” della SOCIETA’



“MALI” della SOCIETA’





MENS
SANA

IN

CORPORE
SANO

Convenzione sui diritti dell'infanzia: articolo 31

"Gli Stati parti riconoscono al fanciullo il diritto
al e al ,
a dedicarsi al e ad
proprie della sua età e a partecipare
liberamente alla vita culturale ed artistica [...]".

Rilassarsi mentalmente e fisicamente.

Tempo libero e libertà di fare ciò che più desidera.

Azioni svolte per libera scelta, il cui scopo è il piacere ed il divertimento.

Attività non controllate dagli adulti e senza il rispetto di regole precise.





EVIDENZE



RIDUZIONE ANSIA E DEPRESSIONE

AUMENTA CAPACITA' CARDIORESPIRATORIA

AUMENTA TROFISMO MUSCOLOSCHELETTRICO

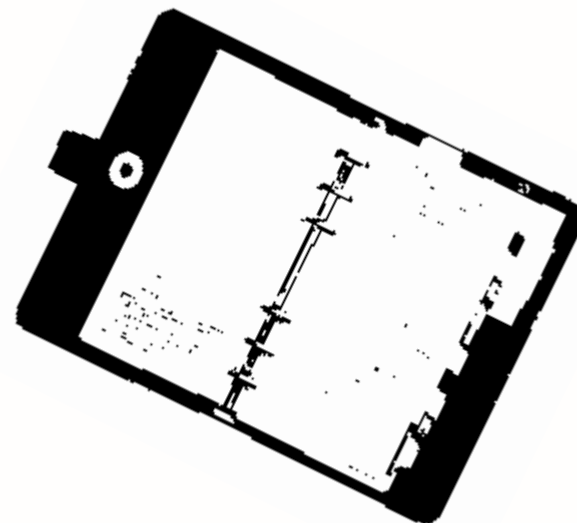
MIGLIORA METABOLISMO



7-17aa

1 ora

3 volte la settimana



ATTIVITA' ETA' SPECIFICHE



5 mesi	9-12 mesi	3-4 anni	5-6 anni	8 anni	12 anni	14 anni
attività a larghetto a gattini	acquaticità, nuoto con genitore ed istruttore qualificato	nuoto, G.O.C.C. sport (miniginnastica, l'bera, miniciclismo, miniatletica)	minicalcio, minivolley, minirugby, minibasket, minipattinaggio, minischerma	scuola calcio, basket, volley, tennis, vela, sci, equitazione, hockey su ghiaccio, baseball, karate, judo, golf, Luff	canottaggio, canoa, pallanuoto	specialità atletica, lotta, pugilato

IL PROBLEMA



Centers for Disease Control and Prevention
CDC 24/7 Saving Lives. Protecting People™



30 milioni di bambini partecipano a Sport organizzati
(Safe Kids USA)

La partecipazione negli USA nelle high school è in incremento,
fino a più di 7.3 milioni di studenti annuali
(National Federation of State High School Associations)

Nei College si contano più di 1 milione di infortuni annui,
con 500,000 visite mediche e 30,000 ospedalizzazioni
(Centers for Disease Control 2013)



TRAUMI SPORTIVI (sotto i 15 anni)

DISTORSIONE	33,4
FRATTURA	18,5
CONTUSIONE	15,6
COMMOZIONE	12,6
ALTRI	11
LACERAZIONE	6,3
LUSSAZIONE	2,6

CALCIO



The American Orthopaedic
Society for Sports Medicine



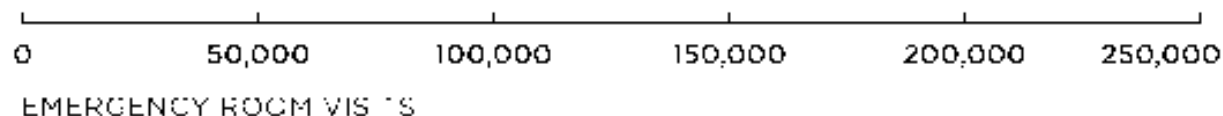
TRAUMI AAI
OVERUSE AAI
TRAUMI AASS
TRAUMI MAXILLO

Basketball	6,268,000	249,550	4	18,532
Soccer	3,780,000	104,190	3	13,841
Football	3,246,000	275,050	8	36,465
Volleyball	3,246,000	31,460	1	1,952
Baseball	2,620,000	51,510	2	6,743
Softball	2,153,000	39,070	2	4,347
Cheerleading	1,176,000	28,890	2	3,549
Wrestling	657,000	33,790	5	4,791
Ice hockey	480,000	9,540	2	2,928

2007
2012

Number of 2012 ER visits

Rate of change from 2007



BASKET



The American Orthopaedic
Society for Sports Medicine



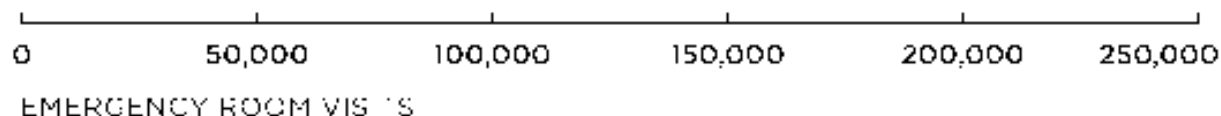
TRAUMI AAI
OVERUSE AAI
TRAUMI AASS
OVERUSE AASS
TRAUMI MAXILLO

Basketball	6,268,000	249,550	4	18,532
Soccer	3,780,000	164,190	3	13,841
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Cheerleading	1,176,000	28,890	2	3,549
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Ice hockey	480,000	9,540	2	2,928

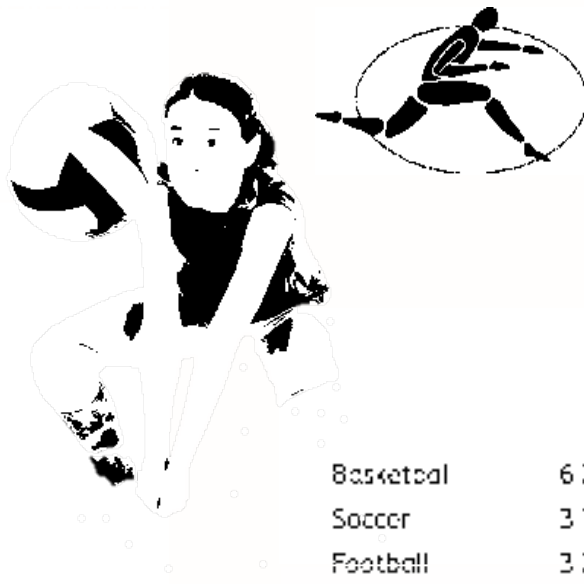
2007
2012

Number of 2012 ER visits

Rate of change from 2007



VOLLEY



The American Orthopaedic
Society for Sports Medicine

TRAUMI AASS
OVERUSE AASS
TRAUMI AAll
OVERUSE AAll

Basketball	6,268,000	249,550	4	18,532
Soccer	3,780,000	104,190	3	13,841
Football	3,246,000	275,050	8	36,465
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Baseball	2,620,000	51,510	2	6,743
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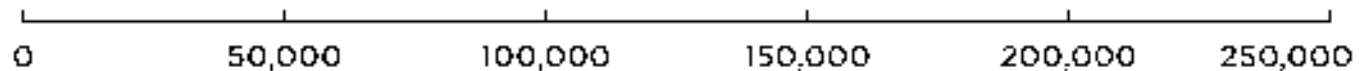
2007
2012

Number of 2012 ER visits

Rate of change from 2007



AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS



EMERGENCY ROOM VISITS

NUOTO



The American Orthopaedic
Society for Sports Medicine



LESIONI DA

STILE CORRELATE

BREASTSTROKER'S KNEE

BUTTERFLY SWIMMER'S SHOULDER

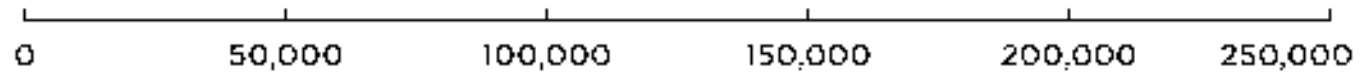
DOLPHIN'S BACK PAIN



2012

Number of 2012 ER visits

Rate of change from 2007



EMERGENCY ROOM VISITS

TRAUMI ACUTI

Apparato muscolo scheletrico

1.35 Million

Number of children seen in emergency departments
with sports-related injuries in 2012²

FRATTURE METADIAFISARIE
DISTACCHI EPIFISARI



FR METADIAFISARIE

TORUS

GREENSTICK

COMPLETA



DISTACCHI EPIFISARI



DISTACCHI EPIFISARI



SPORT DI CONTATTO



TRAUMI AD ALTA ENERGIA





LESIONI MISTE

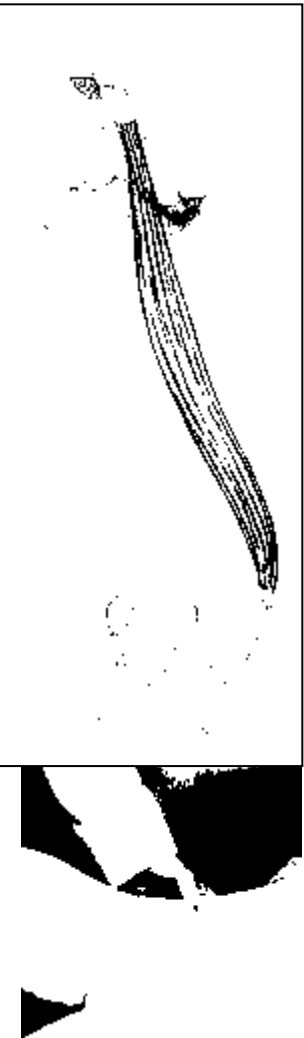


AVULSIONI



NUCLEI DI ACCRESCIMENTO DEL BACINO

DISTACCO DELLA SIAS



VELOCISTI

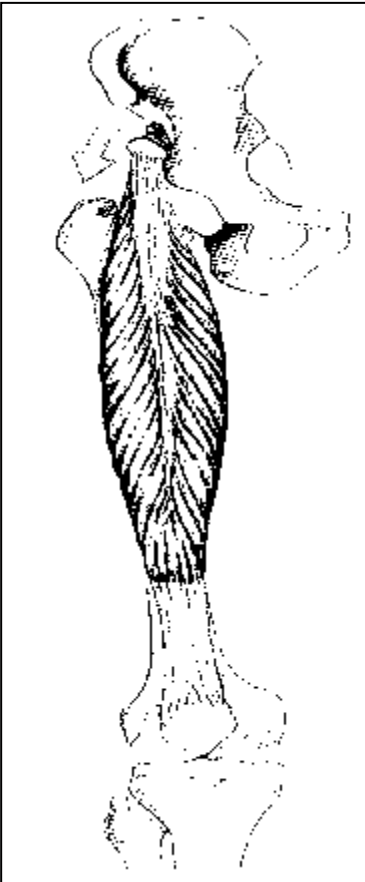


SARTORIO, TFL

DISTACCO DELLA SIAI

CALCIATORI

“calcio a vuoto” o forte tiro a rete



RETTO FEMORALE

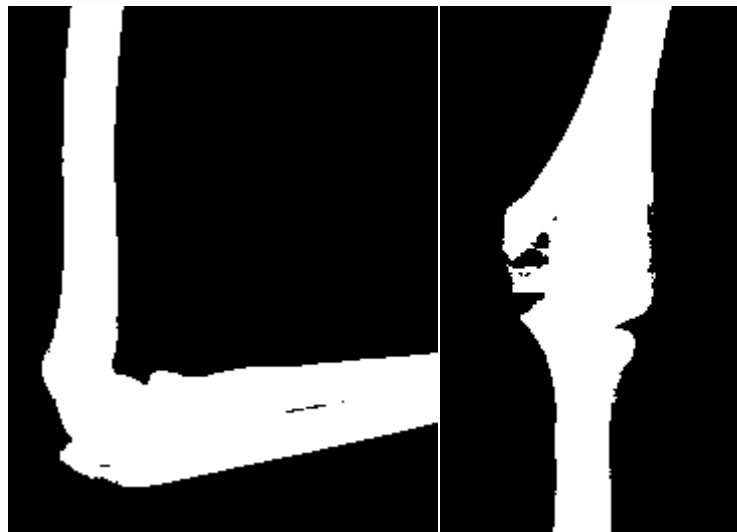
DISTACCO DEL NUCLEO TUBEROSITÀ ISCHIATICA

SCHERMITORI

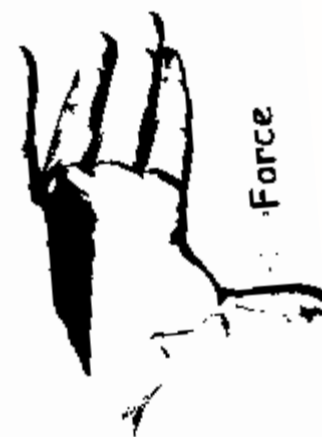


BICIPITE FEMORALE

...ATTIVITA' LUDICHE



SPORT “STAGIONALI”



TRAUMI ACUTI

Apparato capsulo legamentoso

Lesioni legamentose

Distorsioni

lussazioni



DISTORSIONI CAVIGLIA



DISTORSIONI GINOCCHIO



Bambino di 10 aa – calciatore – avulsione spine con LCA intatto



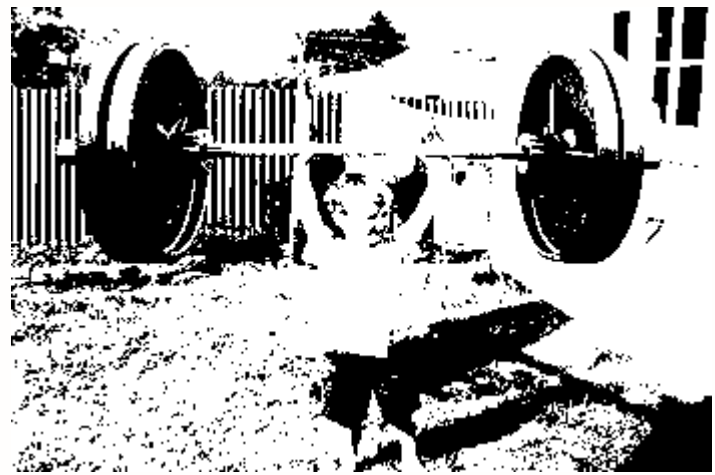
PIU' FREQUENTI DEI TRAUMI ACUTI

MICROTRAUMI RIPETUTI A TENDINI, OSSA E ARTICOLAZIONI

SQUILIBRIO TRA ACCUMULO E RIMODELLAMENTO

FONDAMENTALE DIAGNOSI, TRATTAMENTO E PREVENZIONE

OVERUSE Cause



ERRORI DI ALLENAMENTO:

ECCESSIVO CARICO DI INTENSITA, DURATA E FREQUENZA

PRECOCE RIENTRO ALL'ATTIVITA' DOPO UN TRAUMA

EQUIPAGGIAMENTO INADATTO (SCARPE e TERRENO)

IPER SPECIALIZZAZIONE DI DISCIPLINA e/o DI RUOLO



OVERUSE Diagnosi

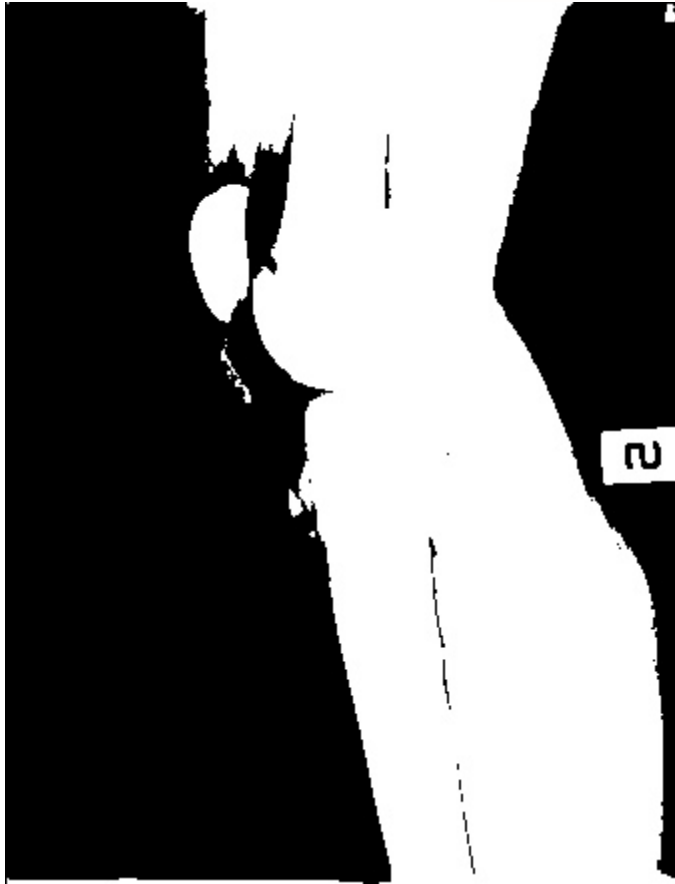
ANAMNESI ED EO

(POI e SE...)

DIAGNOSTICA PER IMMAGINI



OSGOOD SCHLATTER



SINDING LARSEN



SEVER BLANKE



Calcio 12aa – frattura da stress



JUDO 8aa Osteocondrosi - Panner



Tennis 13aa – Apertura fisi



Calcio 12aa - OCD



LOMBODORSALGIE





Low back pain in schoolchildren: the role of mechanical and psychosocial factors

K D Watson, A C Papageorgiou, G T Jones, S Taylor, D P M Symmons, A J Silman, G J Macfarlane

Arch Dis Child 2003;**88**:12-17

FATTORI MECCANICI

- BMI
- Peso zaino scolastico
- Attività sportiva

FATTORI PSICOLOGICI

- Carattere
 - Negativo – Difficoltà relazionale
 - Positivo – Socievole

39 SCUOLE

1376



~~BMI~~

Peso zaino

~~Attività
sedentaria~~

Mechanical factors	Total	No. with LBP	% LBP	Odds ratio*	95% CI†
Body mass index					
12.2 to 17.1	263	52	19.7	1.0	reference
17.2 to 18.4	263	54	20.5	1.0	1.0 to 1.4
18.5 to 20.2	265	57	21.5	1.0	1.6 to 1.4
20.3 to 22.4	267	65	24.3	1.2	1.8 to 1.3
22.5 to 34.7	262	76	29.0	1.4	1.9 to 2.1
Average 5-day load					
1.1 to 3.4 kg	216	49	22.7	1.0	reference
3.5 to 4.2 kg	217	52	23.9	1.2	1.7 to 1.3
4.3 to 5.0 kg	220	59	26.8	1.7	2.3 to 2.5
5.1 to 6.3 kg	210	47	22.4	1.0	1.7 to 1.7
6.4 to 18.0 kg	217	44	20.2	1.0	1.4 to 1.2
% body weight carried					
2.2 to 6.6%	214	39	18.2	1.0	reference
6.7 to 9.8%	211	54	25.6	1.4	1.7 to 1.4
9.9 to 10.5%	204	45	22.1	1.0	1.5 to 1.4
10.6 to 12.5%	206	46	22.3	1.0	1.6 to 1.4
12.6 to 32.1%	210	35	16.7	1.6	1.4 to 1.7

Table 2 Risk of low back pain by total time spent participating in sports† (n=1376)

Time (min)	Total	No. with LBP	% LBP	Odds ratio*	(95% CI)
0-15	121	20	16.5	1	reference
15-30	127	24	18.9	1.3	(0.7 to 2.4)
30-45	121	21	17.4	1.2	(0.7 to 2.0)

[illegible]

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Table 3 Prevalence of LB by time spent in minutes in sedentary activities during the past day (n=1376)*

Sedentary activities (min)	Total	No. with LBP	% with LBP	Odds ratio	(95% CI)
0-14.9	71	14	19.7	1.0	reference
15-29.9	144	12	8.3	0.3	0.04-3.16
30-44.9	74	10	13.5	0.7	0.17-2.91
≥45	107	14	13.1	0.6	0.17-2.06

¹ *Journal of the American Academy of Child and Adolescent Psychiatry*, 35(1), 1-11.

FATTORI PSICOLOGICI vs LBP

Carattere
negativo

Carattere
positivo

Sintomi
somatici

(mal di testa, mal di pancia,
stanchezza diurna, raffreddori)

Table 4 Risk of LBP in relation to psychological factors (SDQ) using univariate analysis (n=1376)*

SDQ dimension	Total	No. with LBP	% LBP	Odds ratio*	(95% CI)
Emotional symptoms					
No	471	67	14.2	1.0	(reference)
Yes	471	113	24.1	1.7	(1.2 to 2.4)
Yes (miss ng = 16)	471	142	30.1	2.0	(1.4 to 2.7)
Conduct problems					
No	471	67	14.2	1.0	(reference)
Yes	471	113	24.1	1.7	(1.2 to 2.4)
Yes (miss ng = 16)	471	142	30.1	2.0	(1.4 to 2.7)
Hyperactivity-inattention					
No	471	67	14.2	1.0	(reference)
Yes	471	113	24.1	1.7	(1.2 to 2.4)
Yes (miss ng = 16)	471	142	30.1	2.0	(1.4 to 2.7)
Peer relationship problems					
No	471	67	14.2	1.0	(reference)
Yes	471	113	24.1	1.7	(1.2 to 2.4)
Yes (miss ng = 16)	471	142	30.1	2.0	(1.4 to 2.7)
Prosocial problems					
No	471	67	14.2	1.0	(reference)
Yes	471	113	24.1	1.7	(1.2 to 2.4)
Yes (miss ng = 16)	471	142	30.1	2.0	(1.4 to 2.7)
Attention deficit hyperactivity disorder					
No	471	67	14.2	1.0	(reference)
Yes	471	113	24.1	1.7	(1.2 to 2.4)
Yes (miss ng = 16)	471	142	30.1	2.0	(1.4 to 2.7)

*Odds adjusted for age and gender in a logistic regression model (miss ng = 16)

Table 5 Risk of LBP in relation to reporting other common childhood complaints using univariate analysis (n=1376)*

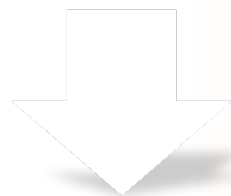
Common childhood complaints reported (in past month)†	Total	No. with LBP	% LBP	Odds ratio*	(95% CI)
Headache					
No days	471	67	14.2	1.0	(reference)
1-5 days	520	113	21.7	1.7	(1.2 to 2.4)
More than 5 days	369	142	38.5	2.6	(1.8 to 3.7)
(miss ng = 16)					
Abdominal pain					
No days	471	67	14.2	1.0	(reference)
1-5 days	520	113	21.7	1.7	(1.2 to 2.4)
More than 5 days	369	142	38.5	2.6	(1.8 to 3.7)
(miss ng = 24)					
Sore throats					
No days	511	74	14.5	1.0	(reference)
1-5 days	470	123	26.2	1.8	(1.3 to 2.5)
More than 5 days	376	157	41.8	2.7	(1.9 to 3.7)
(miss ng = 16)					
Daytime tiredness					
Low	550	80	14.5	1.0	(reference)
Medium	474	87	18.3	1.2	(0.9 to 1.6)
High	436	156	35.8	2.1	(1.5 to 2.9)
(miss ng = 16)					

*Odds adjusted for age and gender in a logistic regression model

†Daytime tiredness measured using VAS



ASSOCIAZIONE DI PIU' FATTORI



AUMENTO ESPONENZIALE
CORRELAZIONE CON MAL DI SCHIENA

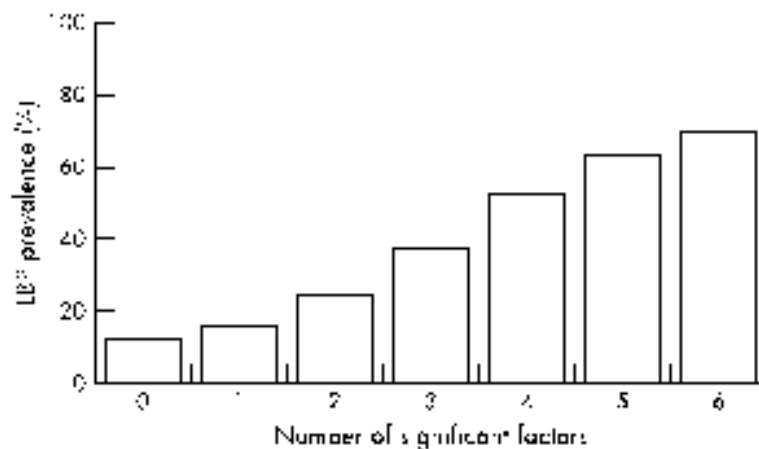
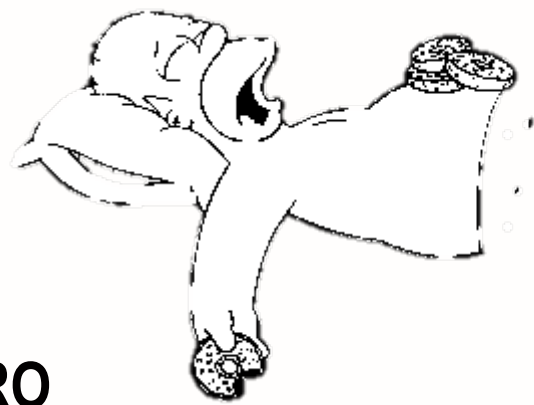


Table 6 Risk of low back pain in relation to positive associations (univariate) using a multivariate model

Positive factors on univariate analysis	Odds ratio	(95% CI)*
Hyperactivity/inattention		
Low	21.0	(reference)
Medium	0.8	(0.6 to 1.2)
High	0.8	(0.5 to 1.2)
Conduct problems		
Low	1.0	(reference)
Medium	1.9	(1.3 to 2.7)
High	2.4	(1.6 to 3.5)
Emotional problems		
Low	1.0	(reference)
Medium	1.1	(0.8 to 1.6)
High	2.0	(1.4 to 2.9)
Peer problems		
Low	1.0	(reference)
Medium	1.2	(0.8 to 1.7)
High	1.0	(0.7 to 1.4)
Headache		
No days	1.0	(reference)
1-2 days	1.3	(0.9 to 1.8)
More than 3 days	1.3	(1.2 to 2.7)
Abdominal pain		
No days	1.0	(reference)
1-2 days	1.2	(0.9 to 1.7)
More than 3 days	1.4	(0.9 to 2.4)
Sore throats		
No days	1.0	(reference)
1-2 days	1.4	(0.96 to 2.0)
More than 3 days	1.7	(1.2 to 2.5)
Daytime tiredness		
No days	1.0	(reference)
1-2 days	1.5	(1.02 to 2.2)
More than 3 days	1.6	(1.3 to 2.3)
Part time job		
No	1.0	(reference)
Yes	1.4	(1.01 to 1.9)

*ORs adjusted for age and gender in a logistic regression model

OVERUSE Trattamento



DIMINUIRE SUBITO I CARICHI DI LAVORO

CAMBIARE ALLENAMENTO MANTENENDO IL LAVORO AEROBICO



FANS

FISOTERAPIA



GHIACCIO



PIÙ DELLA METÀ DI TUTTE LE LESIONI SONO
PREVENIBILI...

RISCHIO PER UN SUCCESSIVO TRAUMA
IN ADOLESCENZA ED IN ETA' GIOVANE ADULTA



PREDISPOSIZIONE PER PATOLOGIE
DEGENERATIVE CRONICHE

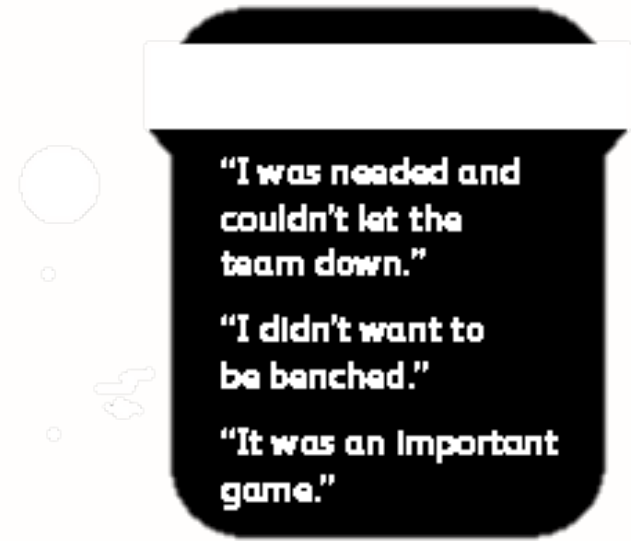
PREVENZIONE

ABOLIZIONE “NO PAIN NO GAIN”

LISTEN YOUR BODY

REGOLA DEL 10%

STRETCHING, RISCALDAMENTO E PROPRIOCETTIVITA’



of coaches

of athletes

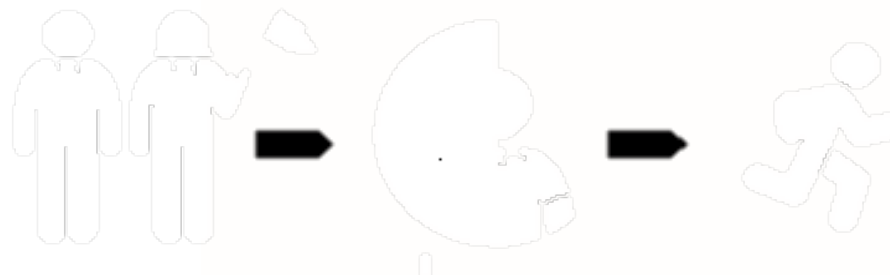
of parents

The top three reasons



The American Orthopaedic
Society for Sports Medicine

70% dei bambini che abbandonano lo sport all'età di 13aa è a causa di:



CHECK LIST



PERIODICHE VISITE DI CONTROLLO

(pediatra, medico dello sport, ortopedico, fisiatra)

STRETCHING E RISCALDAMENTO

DIMINUIRE GLI STRESS

DOSARE I CARICHI DI LAVORO

VARIARE SPECIALITA' E RUOLI

ATTREZZATURA IDONEA SIA PER ALLENAMENTI CHE PER GARA

CALZATURE IDONEE

INCORAGGIARE A COMUNICARE DOLORI DURANTE O DOPO L'ATTIVITA'

CALZATURE



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Foot and Ankle Surgery 14 (2008) 180–189

Review

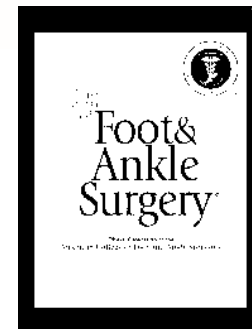
Children sport shoes—A systematic review of current literature

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CONTROLLARE LA MISURA UNA VOLTA AL MESE

CIRCA 15mm PIÙ LUNGA DEL PIEDE

PIANTA FLESSIBILE

LEGGERMENTE AMMORTIZZATE

NO PLANTARI “ORTOPEDICI” O “ANATOMICI” DI FABBRICA

MATERIALE TRASPIRANTE

FORTI LATERALI SEMIRIGIDI E SOSTENENTI RETROPIEDE



CONCLUSIONI

BAMBINI E PICCOLI ATLETI

AMATORIALE
AGONISMO

TRAUMI ACUTI
OVERUSE

LUCI ED OMBRE
INDICAZIONI E LIMITI





GRAZIE