"No Sports" – True or False? Sports Injuries: The Real Magnitude of the Problem

Brian Martin[1], Othmar Brügger[2], Eva Martin-Diener[1],

[1] *Institute of Social and Preventive Medicine of the University of Zurich, Physical Activity and Health Work Unit*
[2] *Swiss Council for Accident Prevention bfu, Bern*

Symposium: Barriers to Physical Activity Promotion in the Public Debate: How Can We Change Pre-conceptions? 3rd International Congress on Physical Activity and Public Health, Toronto, 05.-08.05.2010

"No Sports" – True or False? Sports Injuries: The Real Magnitude of the Problem for PA Promotion

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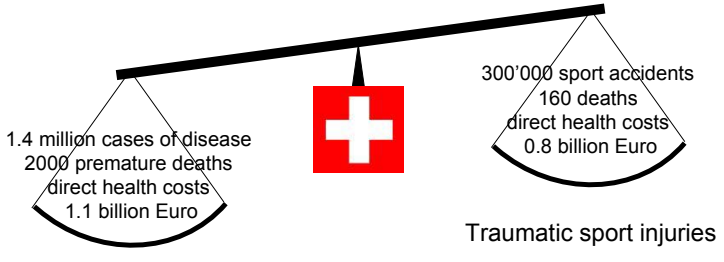
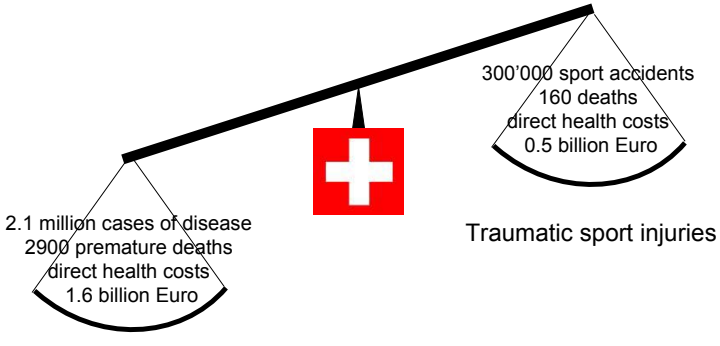
Both physical inactivity and traumatic sport injuries are relevant for public health



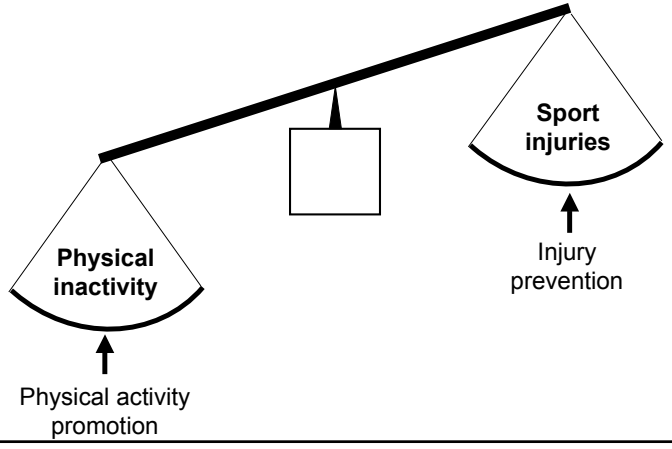
Martin BW, Beeler I, Szucs T, Smala AM, Brügger O, Casparis C, Allenbach R, Raeber PA, Marti B. Economic benefits of the health-enhancing effects of physical activity: first estimates for Switzerland. Schweiz. Schweiz Z Sportmed Sporttraumatol, 2001; 49 (3): 131-133.

Both physical inactivity and traumatic sport injuries are relevant for public health



Updated estimates, as of 2006

Is this the correct model?



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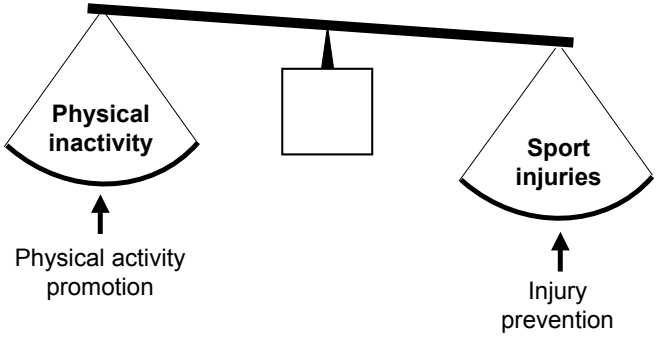

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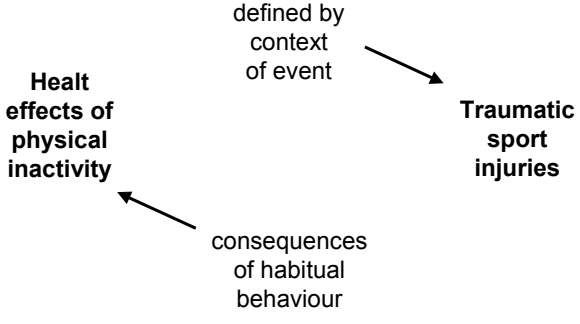

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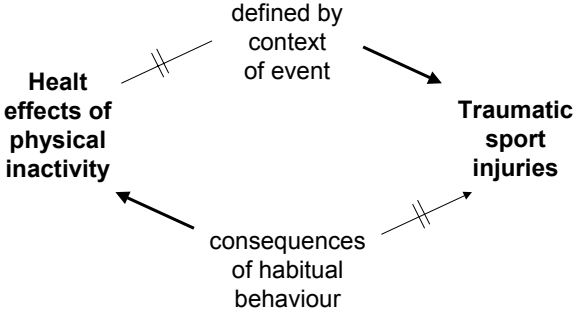

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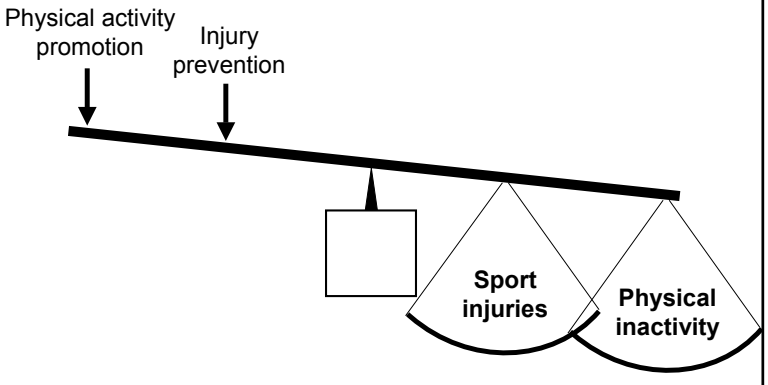

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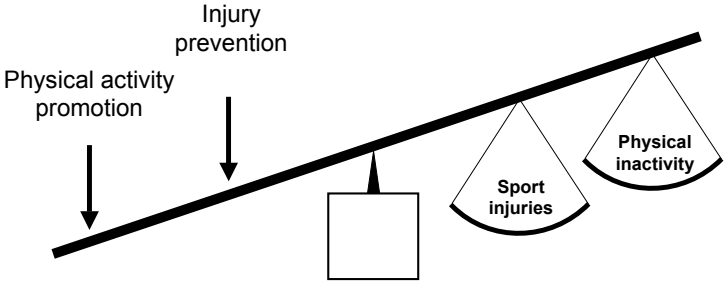


Changes in PA behaviour and sport injuries 2002-2007

Survey Sport Switzerland 2008[1] (behaviour 2007, 15–74 y, n=10'262)
- > prevalence data for different sport activities (%)
- > frequency of activity (days per year)
- > average duration of activity (hours and minutes per session)

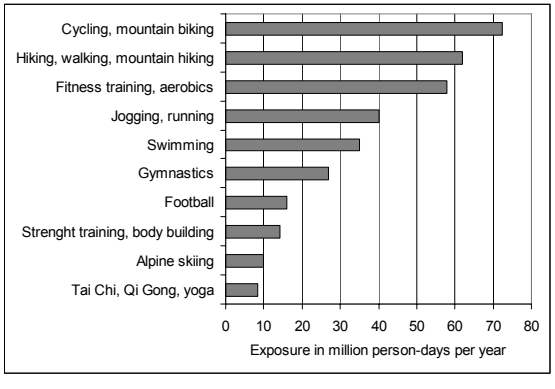
Survey Sport Switzerland 2000[1] (behaviour 2000, 15–74 y, n=2057)
- > prevalence data for different sport activities (%)

Injury statistics Swiss Council accident prevention[2] (17–64 y)
- > monitoring data 2000
- > monitoring data 1998/99/00 and 2005/06/07

1) Lamprecht M, Fischer A, Stamm HP. Sport Schweiz 2008. Magglingen, BASPO 2008
2) Specific analyses

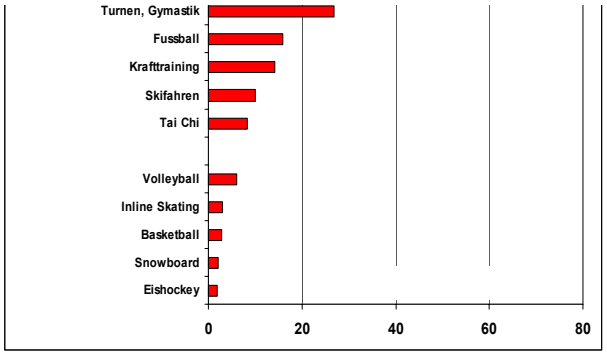
Changes in PA behaviour and sport injuries 2002-2007

Exposure estimated for 10 most frequently reported sports...



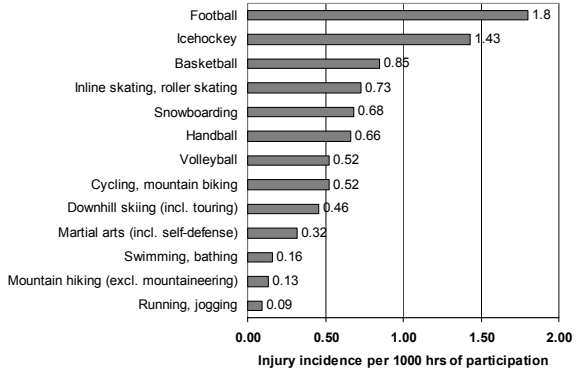
Changes in PA behaviour and sport injuries 2002-2007

Exposure estimated for 10 most frequently reported sports...
+ exposure for 10 sports with most injuries -> 5 additional

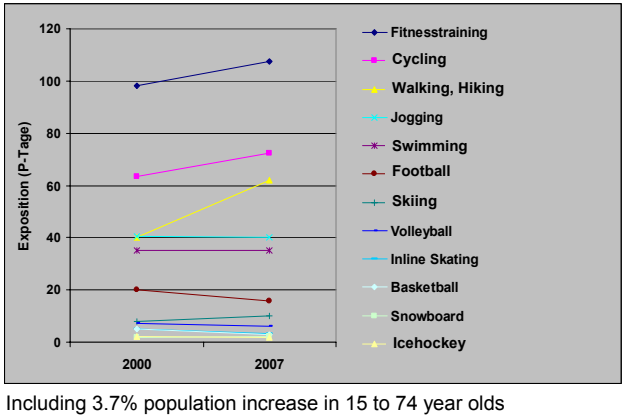


Changes in PA behaviour and sport injuries 2002-2007

Estimation of injury incidence per 1000 hours exposure



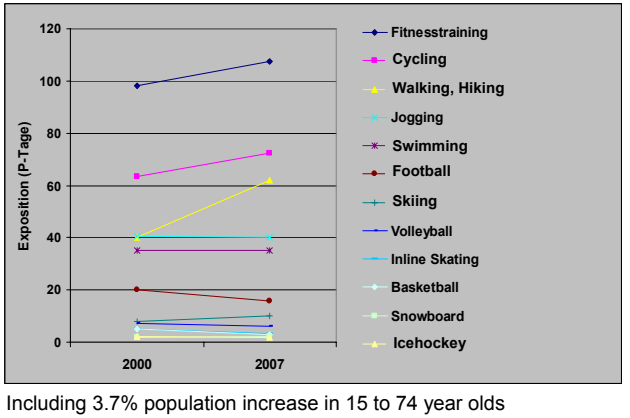
Changes in PA behaviour 2002-2007



Including 3.7% population increase in 15 to 74 year olds

Changes in PA behaviour 2002-2007

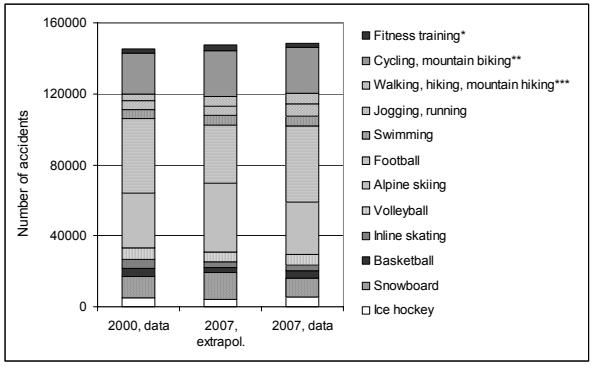
Increase in total exposure time: +10.0%



Including 3.7% population increase in 15 to 74 year olds

Changes in sport injuries 2002-2007

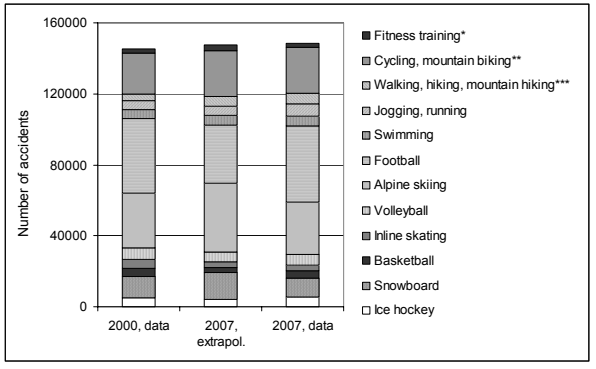
Increase in sport accidents (extrapolated assuming constant activity-specific injury rates): +1.4%



Changes in sport injuries 2002-2007

Increase in sport accidents (extrapolated): +1.4%

Increase in sport accidents (measured): +2.2%



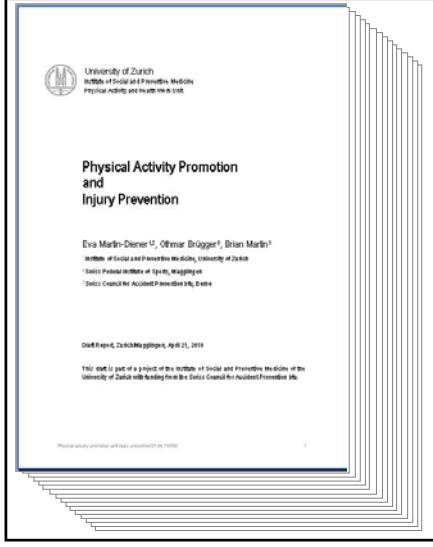
Changes in PA behaviour and sport injuries 2002-2007

Increase in sport accidents (extrapolated): +1.4%

Increase in sport accidents (measured): +2.2%

Increase in total exposure time: +10.0%

- **Increases in PA activity at the population do not need to be accompanied with proportional increases in injuries when people are switching to less dangerous activities (e.g. walking, cycling, fitness training)**


University of Zurich

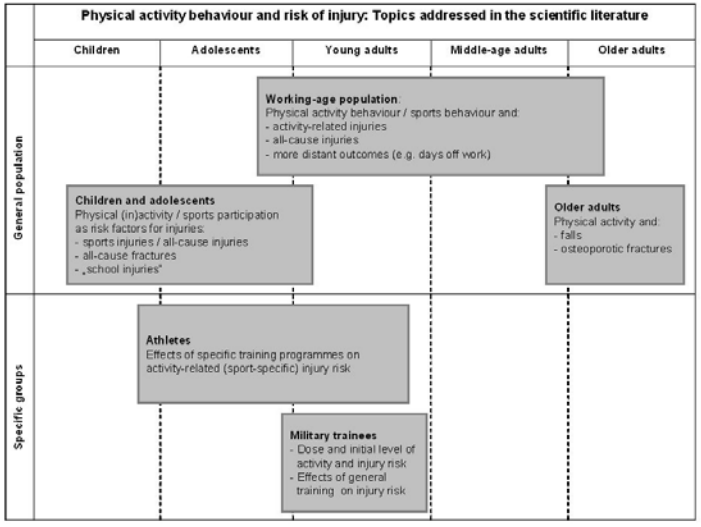
Physical Activity Promotion and Injury Prevention

Review starting from evidence in USDHSS Physical Activity Guidelines Advisory Committee Report 2008, limited number of further studies identified

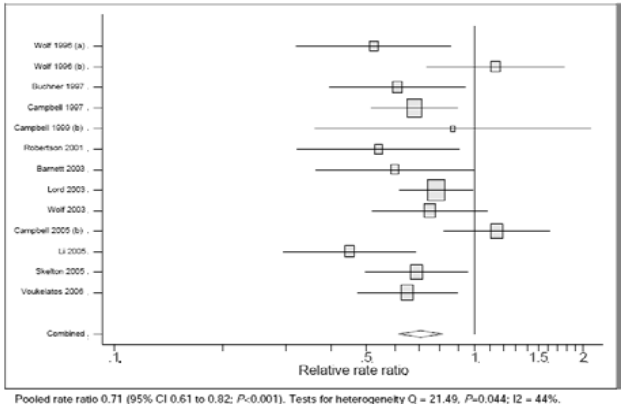
Draft report recently sent to selected international institutions (EMGO, UKK, CDC) for comments

Basis for future national consensus document in Switzerland

Possibly European follow-up project with HEPA Europe and EUROSAFE



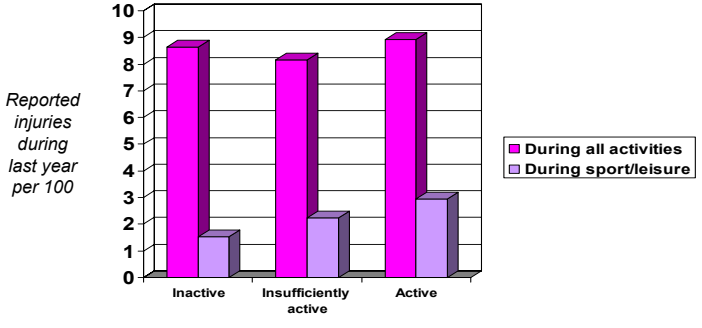
Effect of exercise interventions to prevent falls in older adults



Pooled rate ratio 0.71 (95% CI 0.61 to 0.82; $P<0.001$). Tests for heterogeneity Q = 21.49, $P=0.044$; I2 = 44%.

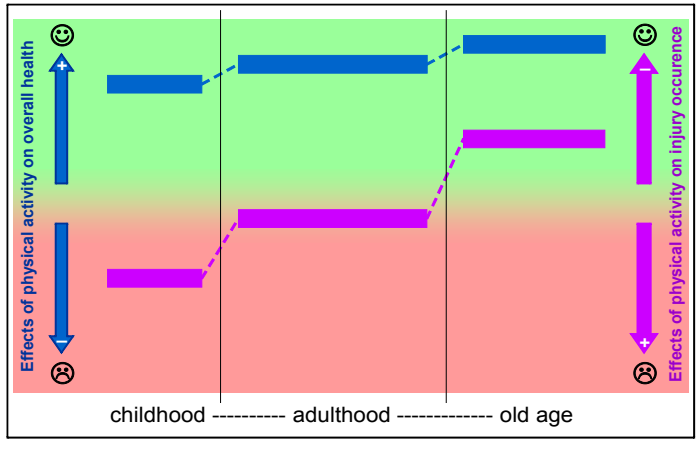
Physical Activity Guidelines Advisory Committee. Physical Activity Guidelines Advisory Committee Report, 2008. Washington, DC: U.S. Department of Health and Human Services, 2008. Source: Adapted from Campbell A and Robertson M 2008.

Cumulative incidence of accidents by leisure-time activity level in the US National Health Interview Survey 2000 to 2002 (n=93'159)

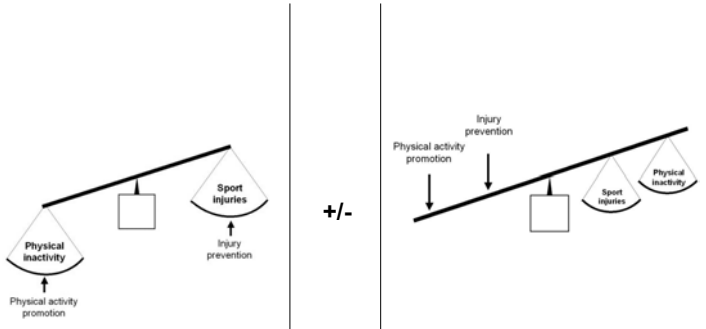


Carlson SA, Hootman JM, Powell KE, Macera CA, Heath GW, Gilchrist J, Kimsey CD Jr, Kohl HW 3rd. Self-reported Injury and Physical Activity Levels: United States 2000 to 2002. Ann Epidemiol. 2006 Apr 18;

PA promotion and injury prevention in different age groups



PA promotion and injury prevention in different age groups



childhood --------- adulthood ---------- old age

Draft implementation recommendations for age groups

- **Link up PA promotion and accident prevention**

  To avoid an increase in injuries, it is important to accompany PA promotion with all measures of accident prevention

- **Support the right choices in PA promotion.**

  Activities should be appropriate for age as well as individual level of fitness and experience

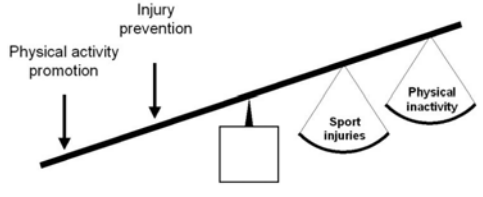
- **Physical activity promotion is accident prevention.**

  Multidimensional training programmes seem to be most effective, general measures of accident prevention should be observed.

childhood --------- adulthood ---------- old age

Conclusions

- Both physical activity promotion and the prevention of sport injuries are important public health issues
- Synergies exist and should be strengthened



- (Much) more research is needed