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The social influence approach through physical education: *Moved Unplugged*, an Italian experience in risk behaviours prevention

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Youth's health

- In developed countries the aetiology of health problems in youth is almost completely "behavioural"
 - ★ Nutrition, reproductive health and sexuality, substance misuse, unintentional and intentional injuries, physical activity, bullism, school attendance, ...
 - ★ These cause short and long term effects, some of them throughout life

Report of a WHO/UNFPA/UNICEF Study Group on Programming of Adolescent Health; WHO Technical Report Series 886, Geneva 1999.

Behavioural clustering

➤ Health compromise

★ *Healthy*

- **Physical activity**, fruit and vegetable consumption, helmet and seatbelt wearing, condom use, ...

★ *Unhealthy*

- Tobacco, alcohol, marijuana, hard-drugs, drunkenness, drink-drive, prescription drugs, sexual-partners, pregnancy, depressed mood, suicide attempts, eating disorders, excess in sedentary activities, gambling, exercise addiction

➤ Social desirability

★ *Desirable*

- Academic performance, religious involvement, **sports**, volunteer activities, paid work, chores at home, reading, helping a friend with homework, social club, church

★ *Undesirable*

- Bullism, weapon carrying, gang membership, school skipping

Behavioural clustering

- In adolescents, health-compromising behaviour as well as health-enhancing behaviour **cluster** together

- ★ **There is a risk of any negative behaviour given another negative behaviour.** For example:

- Substance use, antisocial behaviour, sexual behaviour, and depression (Boles, 2006); eating disorders with depression (Fulkerson, 2004); drinking problem with prescribed drugs (Christo, 2003); doping with other substance (Nilsson, 2001)

- ★ **Positive behaviour is not as highly related to negative behaviour in a protective way**

- The ambiguous role of **Physical Activity and Sport ...**
 - Healthy dietary patterns and physical activity (Sallis, 2000)
 - Unhealthy dietary habits in elite athletes (Verhagen, 2007)
 - Doping and other substance abuse (Miller, 2005; Pesce, 2004)
 - Exercise addiction (Christo, 2003)

...

Behaviour clustering

➤ Setting

- ✦ School, home, community, work, recreation

➤ Gender

- ✦ Different profiles in males and females
 - Physical activity was significantly negatively associated with depressive symptoms for males but not for females (Fulkerson, 2004)

➤ Age

- ✦ Early - Mid - Late adolescence
 - The likelihood of having multiple risks increased with age (Driskell, 2008) but the co-occurrence (correlation indices) of negative behaviours might be stronger in youngest than in oldest adolescents (Boles, 2006)

Behaviour clustering

➤ What is the mechanism in the co-occurrence of different behaviour?

- ✦ For example, cocaine addicts commonly return to using cocaine through drinking alcohol, or caffeine and nicotine use is increased in abstinence from alcohol (Christo, 2003)

➤ Which are the factors influencing the sequence and clustering of behaviour?

- ✦ High educational level - healthier clustering behaviour (de Vries, 2008)

➤ How is it possible to develop and evaluate treatment and prevention addressed to the entire range of problems?

- ✦ Multiple Health Behavior Change (MHBG) for health promotion and disease management (Prochaska, 2008)

Behaviour causality

➤ Risk vs protection factors

★ Intra-personal

- Self-esteem, Self-efficacy, Goal setting, Self-awareness, Problem solving, Creative and critical thinking, Knowledge, ...

★ Inter-personal

- Assertiveness, Empathy, Communication skills, ...

★ Environmental

- Peer pressure, mass media models, illegal traffic, socio-economic disadvantage, family problems, cultural and educational opportunities, re-creative activities, ...

➤ Specific vs cross-sectional, i.e. common for more of one behaviour

- ★ For example, self-efficacy in smoking and buying cigarettes predicted smoking, but it also predicted selective marijuana and alcohol use (Victoir, 2007)

All these reflections imply that ...

➤ It is not enough addressing sporadic efforts to one or to a small number of topics

- ★ More frequently drugs, tobacco, alcohol prevention

➤ It is very strategic making "ample" programmes

- ★ Targeted to multiple behaviours
- ★ In different settings
- ★ Aimed to reinforce/correct common determinants

➤ It is important exploring the potential opportunities from new/original topics and approaches

- ★ **Physical Activity and Sport**
- ★ Music, dance, art education (Correia, 2005)

Youth's PA patterns

- **Physical Activity**, is an umbrella term describing any bodily movement produced by the skeletal muscles that results in energy expenditure
 - **Exercise**, is a subset of physical activity which is volitional, planned, structured, repetitive and aimed to improve or maintain an aspect of fitness or health
 - **Sport**, involves structured competitive situations governed by rules
 - **Physical fitness**, is a set of functional capacities which in varying degrees are a result of genetics and stage in the lifespan.
 - ✦ Cardiovascular endurance, muscular strength, flexibility ...
- (Fox, 2000)

For all children and adolescents PA occurs mainly through

- **Transport**, as in cycling or walking to school or shops
 - **Informal play**, such as playground, street or park games during free time
 - **Formal play**, as
 - ✦ Physical Education (**PE**) classes
 - ✦ Organized Sport or Exercise (**OPA**) session at school or elsewhere
 - **Work**, as delivery rounds, jobs in sales or shelf stacking, household tasks
- (Fox, 2000)

Dimensions for PA

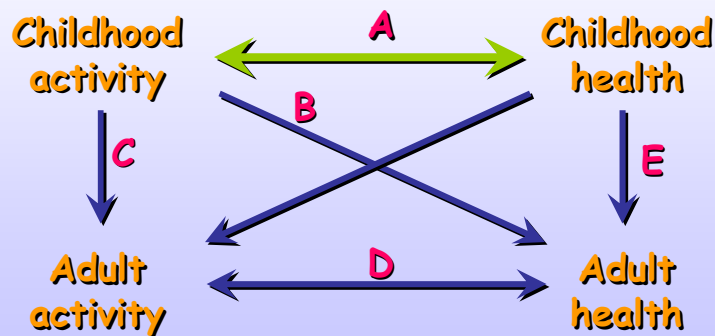
- **Type**, of participation such a running, cycling, walking, swimming, etc.
- **Intensity**, usually categorized as Light, Moderate, Vigorous
- **Frequency** of participation
- **Duration** of each session and/or the duration for which a particular exercise intensity is maintained

Physical Activity profile

Clearly, youth activity is best described as a profile rather than a single entity

- a complex **matrix of behaviours**
- that take place in a range of **social contexts**
- each with its own set of **physiological and sociological determinants** and **outcomes**

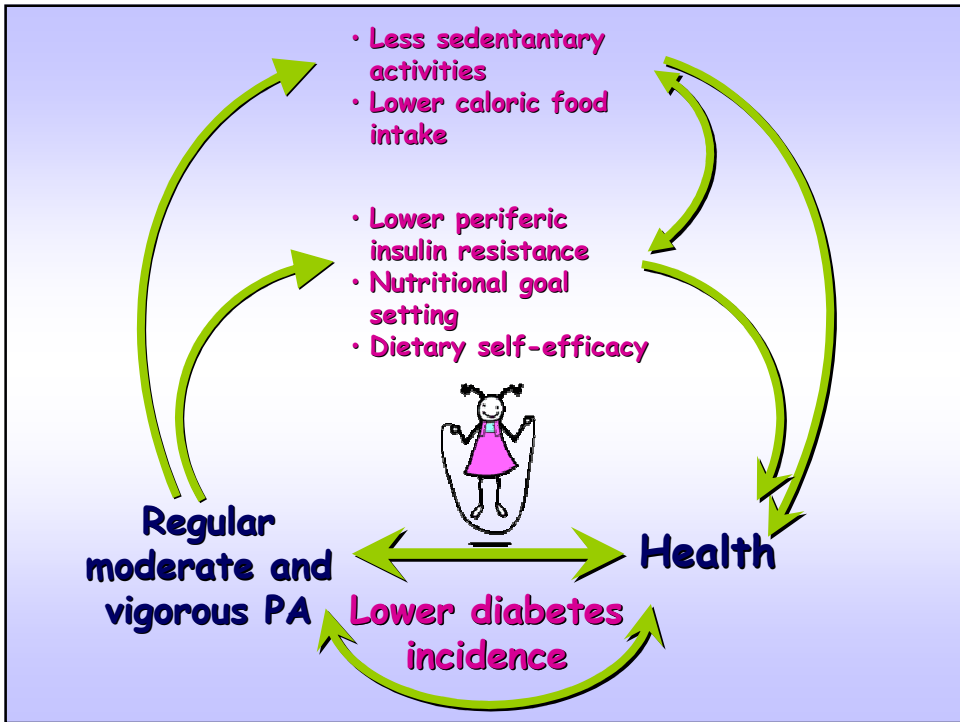
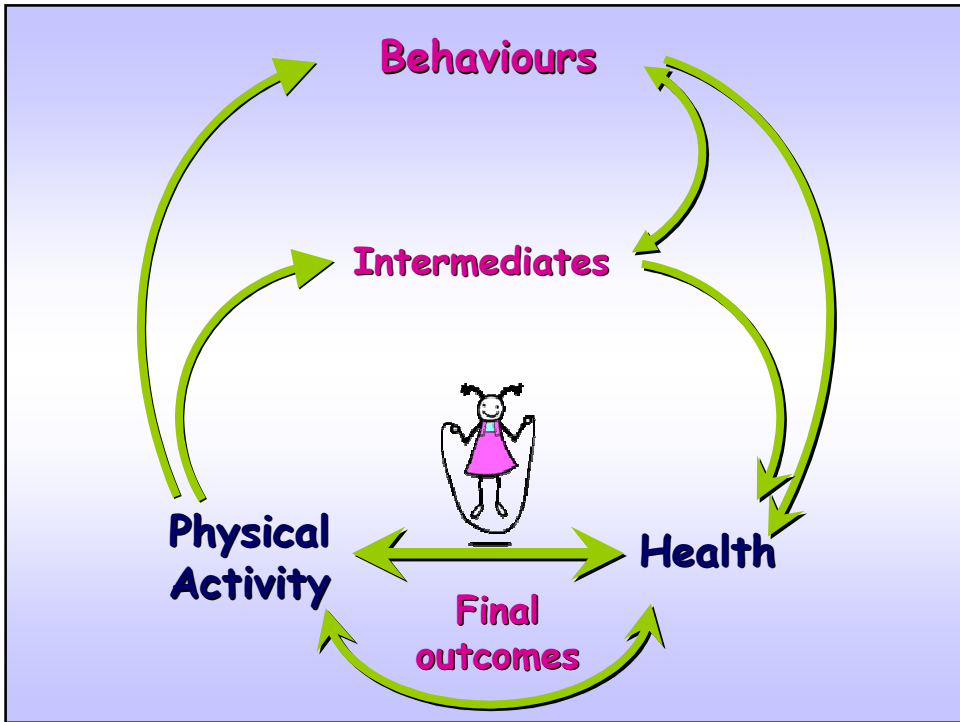
Physical activity and health Hypothetical relationships in children and adults



Blair SN, Clark DG, Cureton KJ, Powell KE. Exercise and fitness in childhood: implication for a lifetime of health. In Perspective in exercise science and sports medicine (ed. Gisolfi CV, Lamb DR). McGraw-Hill, New York, 1989; 401-430.

Epidemiological evidences

- Studies on diseases and disease risk factors assessed evidences for these *positive* outcomes
 - ★ **Cardiovascular disease protection**
 - Blood pressure
 - Lipidic profile (LDL - HDL Cholesterol)
 - ★ **Overweight and obesity reduction**
 - ★ **Type II diabetes**
 - ★ **Skeletal health**
 - ★ **Cancer**





Health Education Authority (UK). New recommendations for promoting health-enhancing physical activity with young people (5-18 yrs)

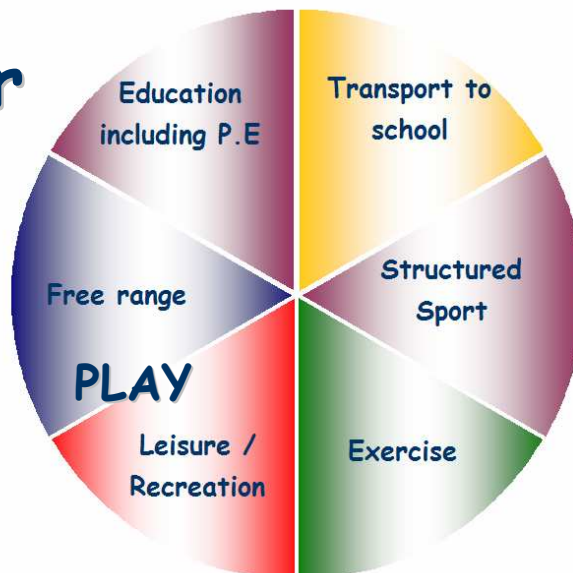
Primary recommendations

- ★ All young people should participate in physical activity of at least moderate intensity for **one hour per day**
- ★ Young people who currently do little activity should participate in physical activity of at least moderate intensity for at least half an hour per day

Secondary recommendations

- ★ **At least twice a week**, some of these activity should help to enhance and maintain muscular strength and flexibility and bone health

One hour a day



Health Education Authority, United Kingdom. New recommendations for promoting health-enhancing physical activity with young people (5-18 yrs)

Epidemiological evidences

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 - ★ Cancer
 - ★ **Psycho-social benefit**
 - Self-esteem
 - Mood - psychological wellness
 - Cognitive functions
 - **Social desirable - healthy behaviours**

...?!?
Equivocal
evidences

PA involvement and adolescents' behaviour

- Physical Activity and sports do not always protect from unhealthy behaviours ...
- The direction and strength of these associations varies
 - ★ **in relation to PA**
 - High - Low level
 - Kind of sport
 - ★ **across different population sub-groups**
 - Males - females
 - Socio-cultural characteristics

PA involvement and adolescents' behaviour... some examples

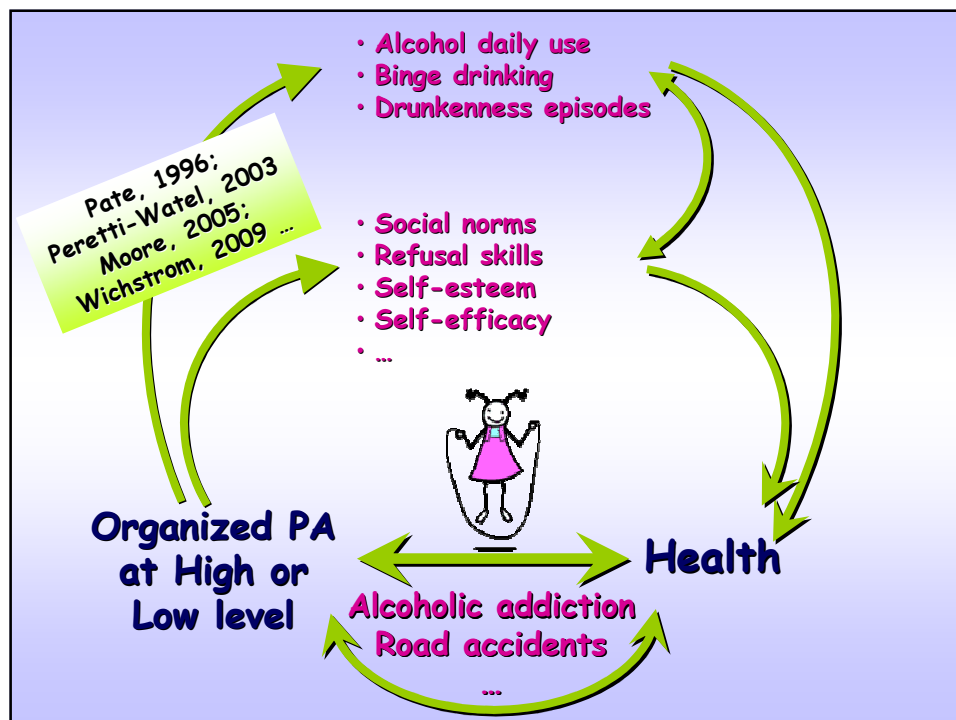
- ▶ High physical activity was associated with increased **alcohol consumption** among
 - ★ U.S. female students but not in males (Pate et al, 1996)
 - ★ Among U.S. females involved in out-of-school dance, and gymnastic but not in girls involved in the same school-sponsored dance and gymnastic (Moore et al, 2005)

PA involvement and adolescent behaviour... some examples

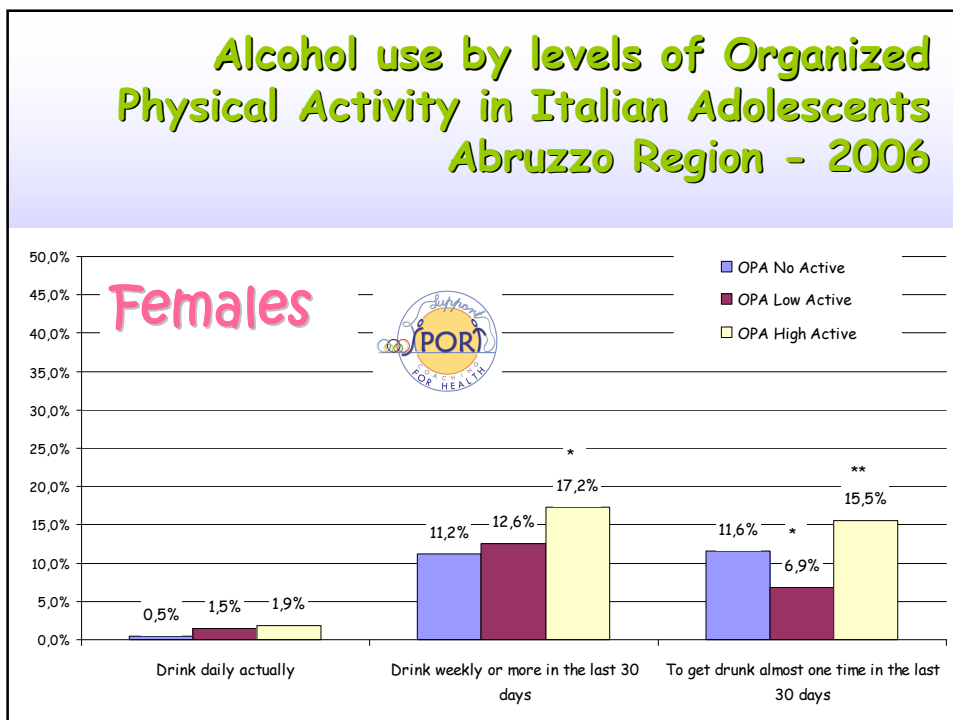
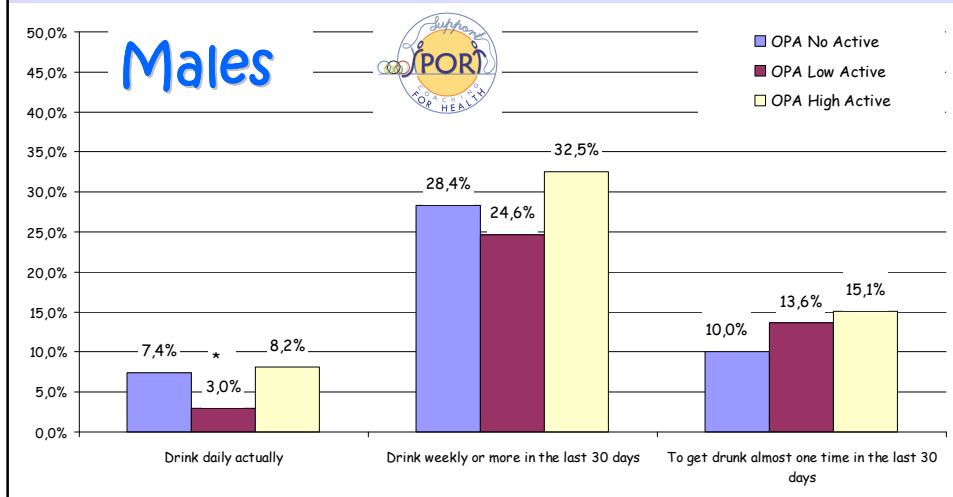
- ▶ In a study on French **elite student athletes** (Peretti-Watel et al, 2003):
 - ★ dramatically **lower prevalence** for cigarettes, alcohol and cannabis **comparing with other adolescents**, but ...
 - ★ within elite athletes groups ...
 - team sport vs individual sport was correlated positively with **alcohol use** (OR = 2.7 for girls, OR = 1.8 for boys),
 - girls who entered competition at international level were more prone to **smoke cigarettes** (OR = 6.1) and **cannabis** (OR = 2.4).

PA involvement and adolescent behaviour... some examples

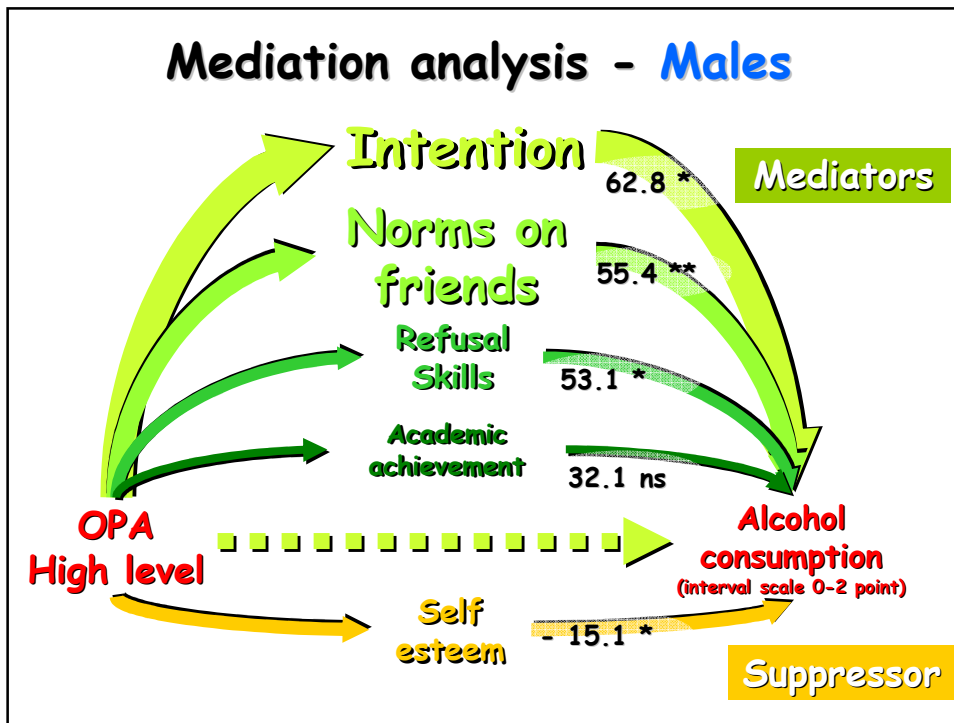
- ▶ A longitudinal study on Norwegian students (Wichstrom & Wichstrom, 2009)
 - ★ Participation in organized sport during adolescence predicts **abuse behaviours from late adolescence to adult-hood** when controlling for potential confounders depending from kind of sport ...
 - team sports may increase the growth in **alcohol** misuse during late adolescence and adulthood
 - team sports and endurance sports may reduce later increase in **tobacco** and **cannabis** use



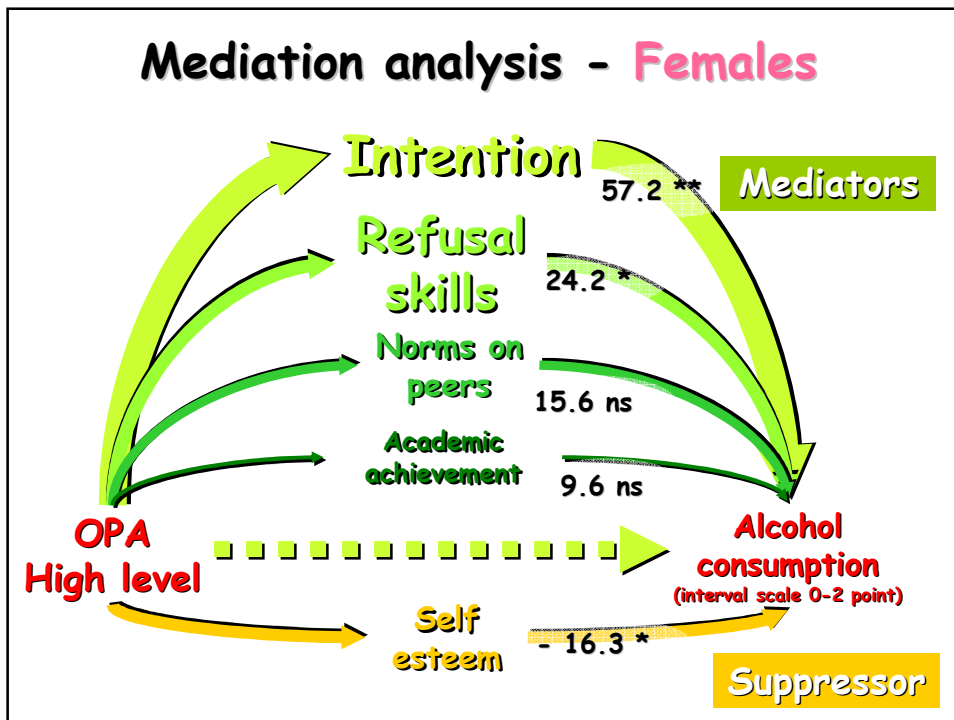
Alcohol use by levels of Organized Physical Activity in Italian Adolescents Abruzzo Region - 2006



Mediation analysis - Males



Mediation analysis - Females



Physical Activity (PA) and adolescents' health

- PA has a strong influence on the health of the young, both positive (benefits) and negative (risks). Thus, it is important ...
 - ★ to promote an active lifestyle from childhood, especially in risk-groups
 - e.g. adolescents, girls, disadvantaged social strata
 - ★ to prevent negative outcomes both intermediate and final
 - e.g. doping, injuries, athlete triad, violence, abuse behaviours associated to recreational setting, etc.
- How is it possible to promote health in youth through **Physical Education** and **Sport**?

