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The Role of Physical Activity in Positive Youth Development and Mental Health

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Labour (and leisure) conditions have changed

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The Physical Activity Transition

Katzmarzyk & Mason, *JPAH*, 2009

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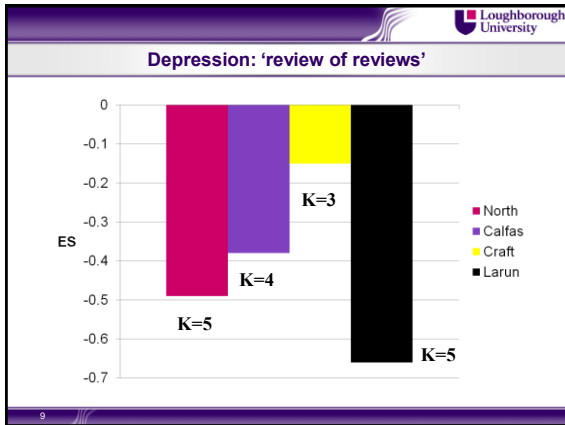
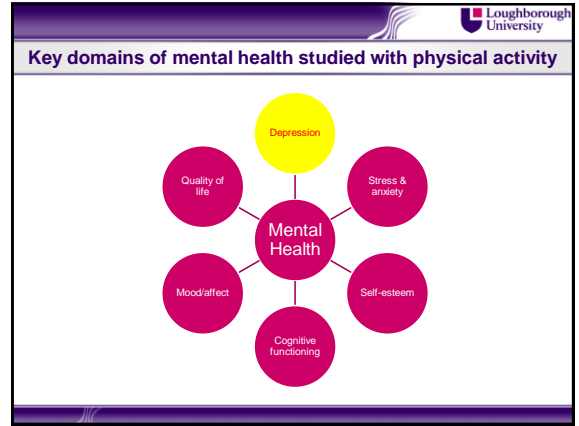
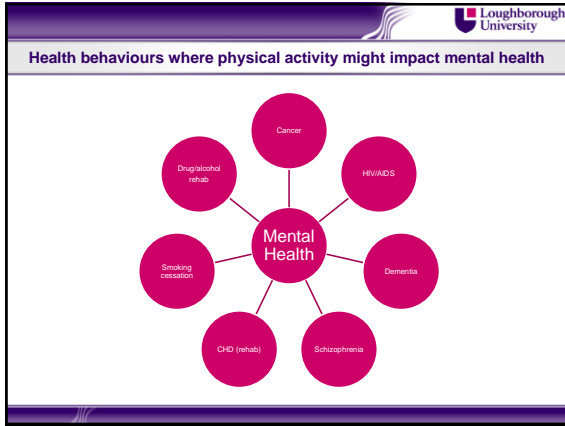
Key domains of mental health studied with physical activity

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Disease burden measured in Disability-Adjusted Life Years (DALYS)

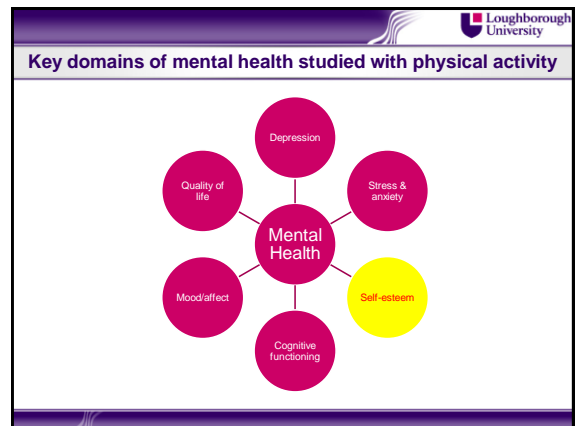
Estimate 1990			Projection 2020		
Rank	Cause	% total	Rank	Cause	% total
1	Lower respiratory infections	8.2	1	Ischaemic heart disease	5.9
2	Diarrhoeal diseases	7.2	2	Unipolar major depression	5.7
3	Perinatal conditions	6.7	3	Road traffic accidents	5.1
4	Unipolar major depression	3.7	4	Cerebrovascular disease	4.4
5	Ischaemic heart disease	3.4	5	Chronic obs pulmonary disease	4.2
6	Cerebrovascular disease	2.8	6	Lower respiratory infections	3.1
7	Tuberculosis	2.8	7	Tuberculosis	3.0
8	Measles	2.7	8	War	3.0
9	Road traffic accidents	2.5	9	Diarrhoeal diseases	2.7
10	Congenital abnormalities	2.4	10	HIV	2.6

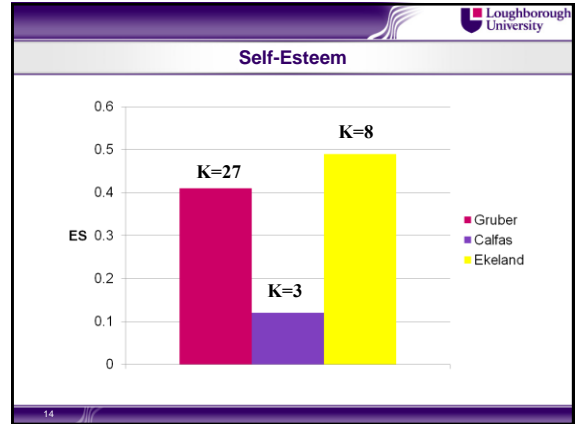
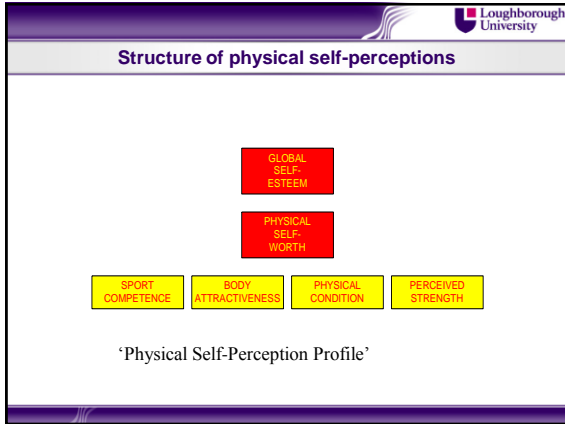
In females and developing countries, unipolar major depression is projected as becoming the leading cause of disease burden



- Depression
- Larun et al.:
 - PA had similar effect to psychosocial interventions
 - ✓ General population (k=2)
 - ✓ Children in treatment (k=1)

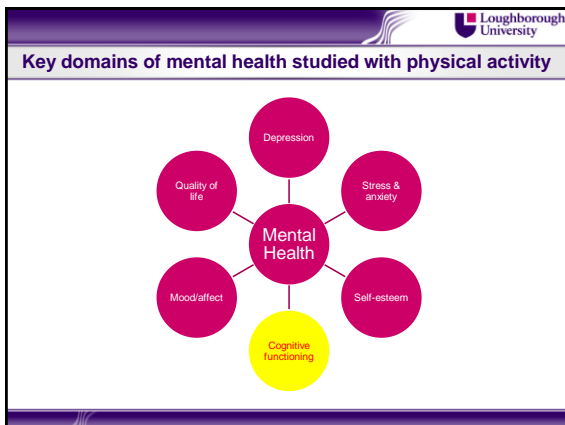
- Depression
- Conclusion:
 - Physical activity over no intervention appears to be potentially beneficial for reducing depression in young people
 - Evidence base is small
 - Many reviews include cross-sectional studies that may distort associations or fail to rule out 'reverse causality'





- ### Self-Esteem
- **Gruber (1986):**
 - Larger effects for:
 - ✓ children with perceptual, emotional and learning disabilities
 - ✓ aerobic fitness activities

- ### Self-Esteem
- Conclusion:
 - Physical activity can lead to improvements in self-esteem, at least in the short term
 - But, should also assess 'physical self worth'



- ### Physical Activity & Cognitive Functioning
- What is cognitive functioning?
 - ✓ **Cognitive/brain functions:** memory, abstract reasoning, spatial ability
 - ✓ **Processes of cognition:** information processing efficiency and speed, attention, perception
 - ✓ **Performance measures:** academic performance

Physical Activity, Cognition and Academic Achievement in Childhood: Meta-analysis

- K=44
- 125 ESs
- K=9 experimental designs

Design	Effect Size
Overall	0.32
Expt	0.28
Quasi-Ex	0.38
Xsec	0.25

Sibley & Etnier, *PES*, 2003

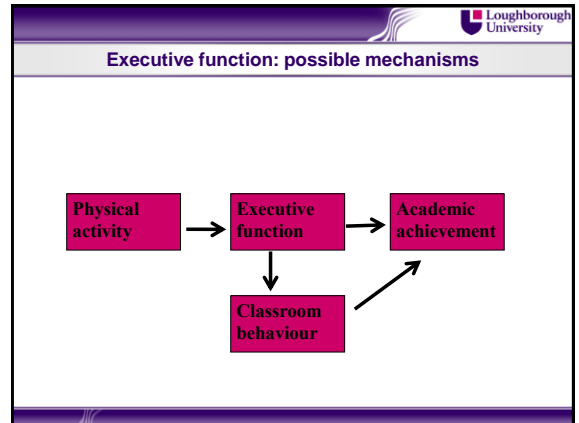
Davis et al. (*Health Psy*, 2011)

- 'Inactive', overweight 7-11 yr olds (N=171)
- **Control group**
- **Low dose** (after school) exercise group (20 min/day) for 3 months
- **High dose** (after school) exercise group (40 min/day) for 3 months
- **Outcomes:** (1) cognitive tests (e.g., planning, attention) and (2) academic achievement (reading, maths)

Davis et al. (2011): post-test scores

Group	Exec Func	Maths	Reading
Control	102	104	100
Low ex	103	105	101
High ex	105	107	100

Supported by fMRI data on sub-sample



Cognitive Functioning

- Physical activity can be associated with improved cognitive performance and academic achievement in young people
- Better effects for higher order executive functioning tasks
- Devoting more time to PE at the expense of classroom time does not adversely affect academic performance (and may help)

Cognitive Functioning

- Associations are usually small and not entirely consistent
- Physical fitness has also been associated with academic performance but has been investigated in few studies
- Emerging neuro-science evidence

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Can physical activity boost positive mental health?

- Yes
- Developing evidence for:
 - ✓ Depression
 - ✓ Self-esteem
 - ✓ Cognitive functioning

25

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Physical Activity, Sport and Positive Youth Development

- Can 'sport' teach important 'life skills'?

26

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Context

- "Sports have brought me much happiness and taught me many useful lessons. I cannot prove it to others, but I believe it to be so" (Martens, 1978).

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Context

- "In an attempt to achieve enjoyment and excitement many children turn to sport and through their participation they learn important life skills.
- Sport offers the opportunity to experience the rewards of personal achievement and golf in particular teaches self-discipline, co-operation and respect". (The Golf Foundation)

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Context

Skills for Life

Sporting and social development of young people

Playing skills Putting Short game Long game Playing Goller's code	Personal skills Honesty Respect Co-operation Self-motivation Concentration Perseverance
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Junior Members Good Life Skills

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'Good' life skills?

- **'Pro-social' skills**
- Honesty
- Respect
- Co-operation
- **'Personal' skills**
- Self-motivation
- Perseverance
- Concentration

30

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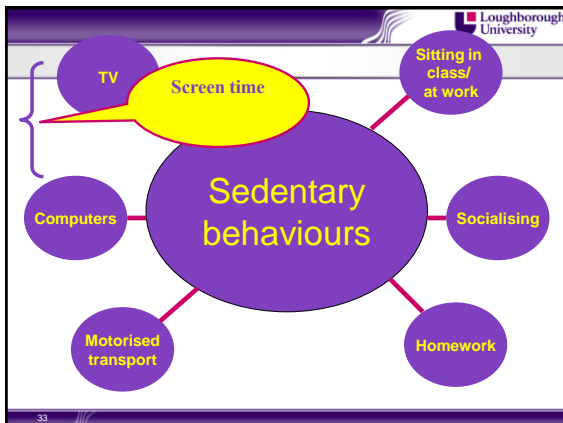
A review of the evidence

- Life skill development appears to be achieved, although this may not be explicitly 'taught' nor will be automatic for all participants
- Key element is good adult leadership/mentoring, and especially the development of interpersonal relationships between the children and adults.

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And finally sedentary behaviour and mental health

32



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Sedentary Behaviour and Mental Health in Young People

- 8 X-sec studies (some large) show small-to-moderate negative associations between sedentary behaviour and mental health
- Poorer self-perceptions, body image, HRQoL
- Reverse causality possible
- Some control for PA
- 1 longitudinal study shows TV viewing, but not computer games, associated with increased odds of depression after 7y follow-up
- Significant literature on wider aspects of social and behavioural outcomes associated with media use

34

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