

Contact with Nature and Plants Improve Psychological Health: What is the evidence?



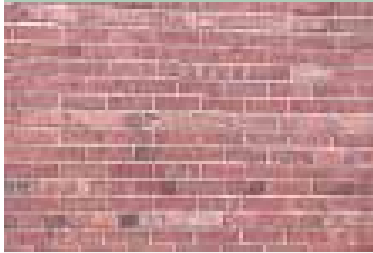
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The UK's Health

- Lifestyles are more sedentary – both work, schools and leisure time
- 63% of men and 75% of women in UK do not exercise enough to benefit health
- CVD, Type II diabetes, many cancers and chronic respiratory disease are all on the increase
- Obesity affects 1.6 billion people worldwide
- At least 1 in 6 individuals are affected by mental ill-health at any one time
- Depression and anxiety cost the UK 13.8 million working days and affected 530,000 people

Nature is Good For Us



- ‘Biophilia Hypothesis’
- A room with a view
 - Prisoners
 - Hospital patients
- Exposure to nature
 - Dental patients
 - Plants in offices & homes
 - Healing gardens in hospitals
- Exposure to nature improves health and wellbeing and facilitates activity





Nature Deprivation



- The natural environment is an important resource for human health
- If nature is important, then deprivation will create problems
- Physical benefits of nature in urban areas – microclimate effects
- Design of built and natural environment matters for mental health
- The 'green' element often not considered essential in urban planning and regeneration
- Perception of the importance of nature?



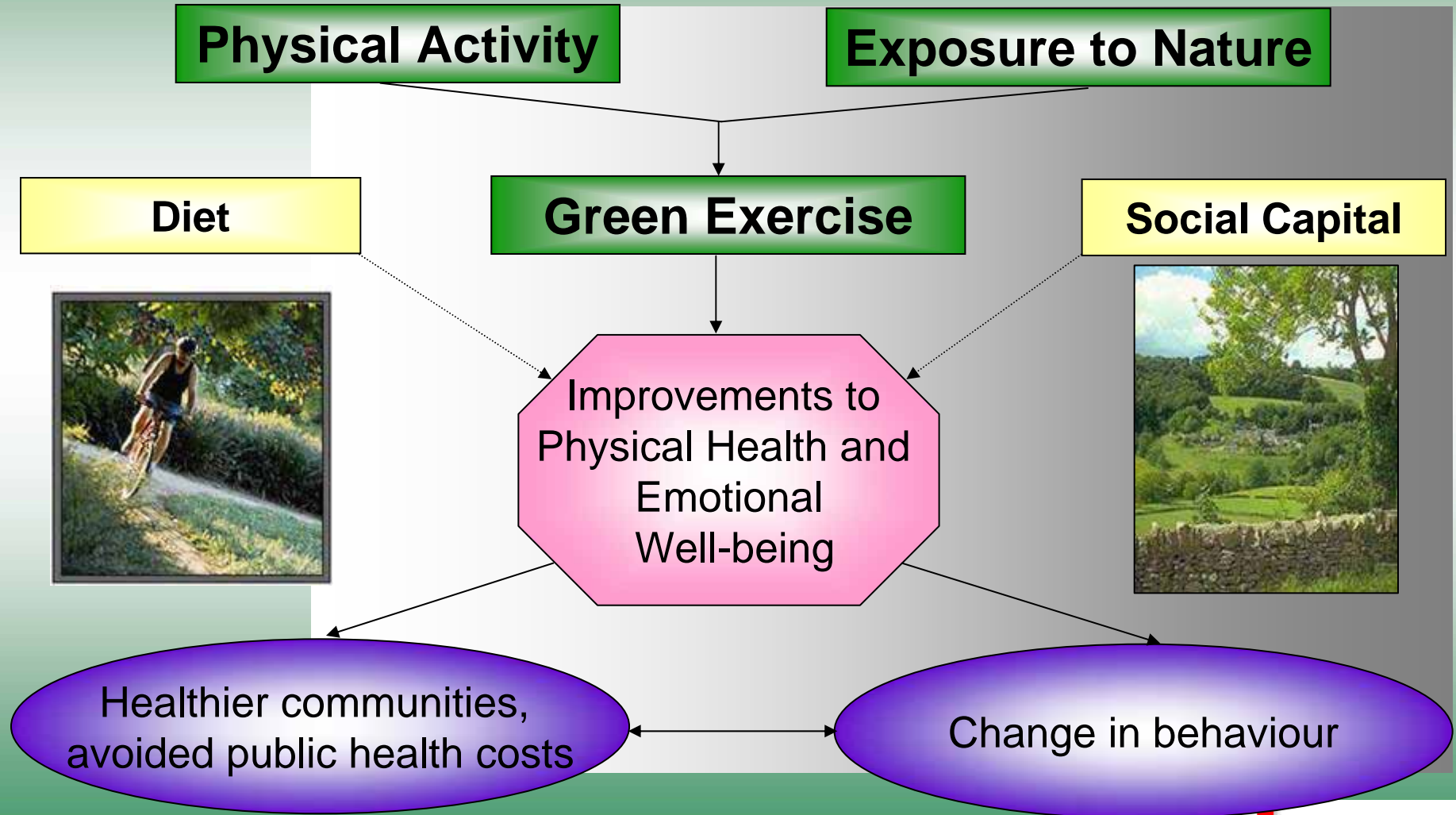
Encounters in Nature



- Early encounters vital for creating meaning and establishing identity
- Concerns that children today spend too little time outside
- Disconnections mean
 - Reductions in ecological literacy
 - Misunderstandings about food
 - Reductions in cognitive capacity
- Importance of easy access to greenspaces



The Concept of “Green Exercise”



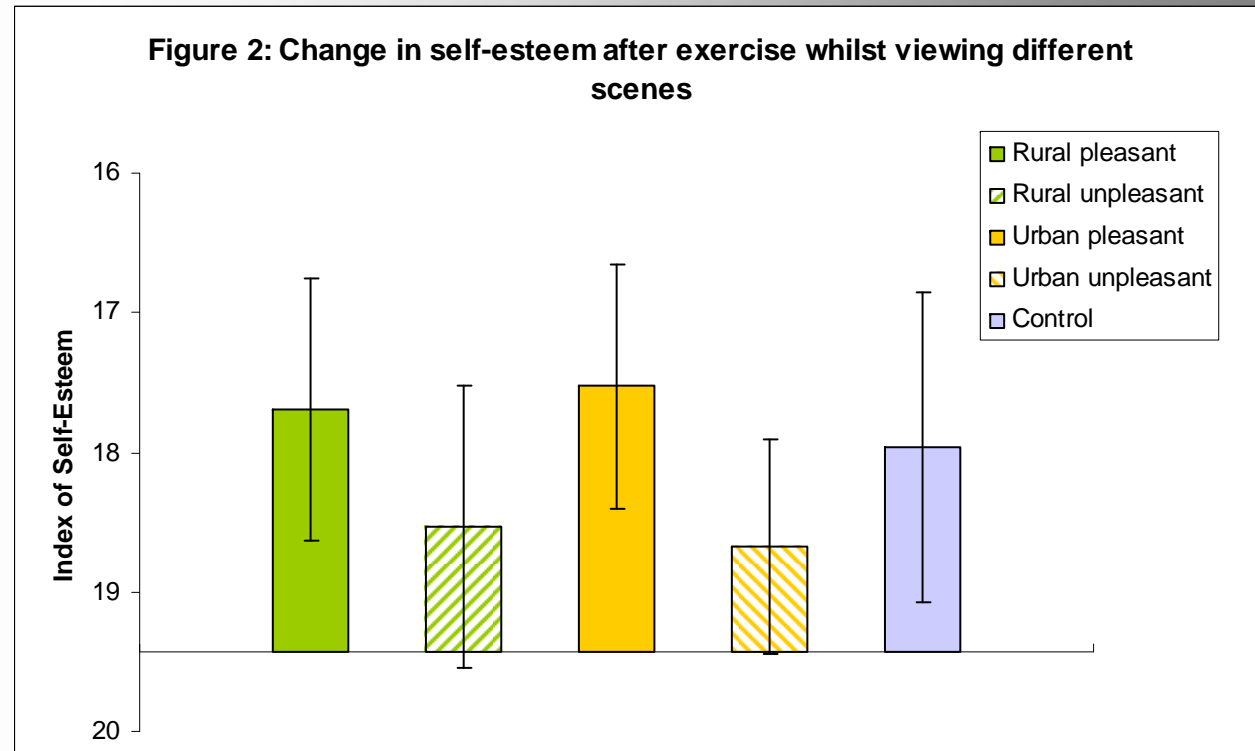
Study 1: Rural and Urban Views



- Comparison of 4 types of views while exercising on a treadmill for 20 minutes
 - Observed either rural pleasant, rural unpleasant, urban pleasant, urban unpleasant or no pictures (control)
- Controlled conditions (100 subjects)

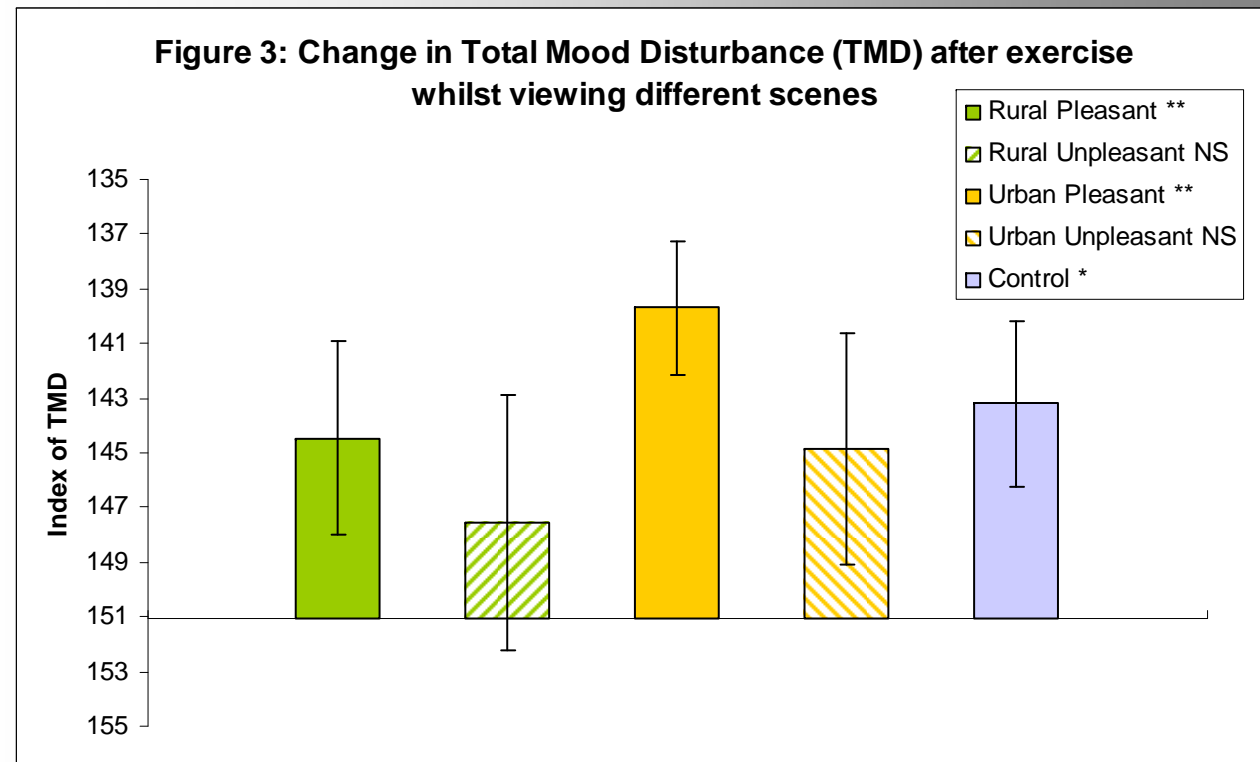


Effect on Self-Esteem



- All improvements; rural pleasant & urban pleasant greatest
- Unpleasant scenes lacking nature made self-esteem worse relative to control

Effect on Total Mood Disturbance



- All improvements, biggest improvements seen in pleasant conditions

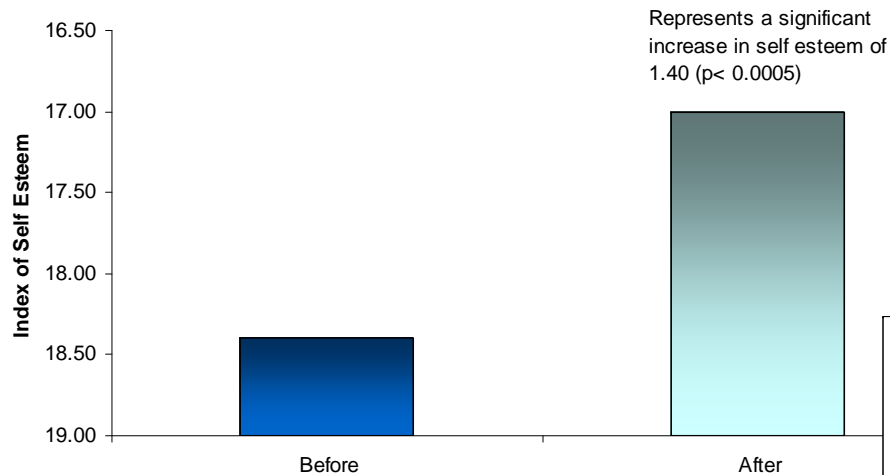
Study 2: Green Exercise Activities



- University of Essex study supported by the Countryside Recreation Network
 - 10 case studies
 - 263 participants (134 men; 129 women)
 - Composite questionnaire - Before and after activity
 - Different types of activity
 - Different levels of intensity and duration
 - Different types of habitat
 - A geographical spread
 - Group and individual activities
 - Organised or informal sessions
 - Analysed health benefits derived from participation

Change in Self-Esteem and Mood

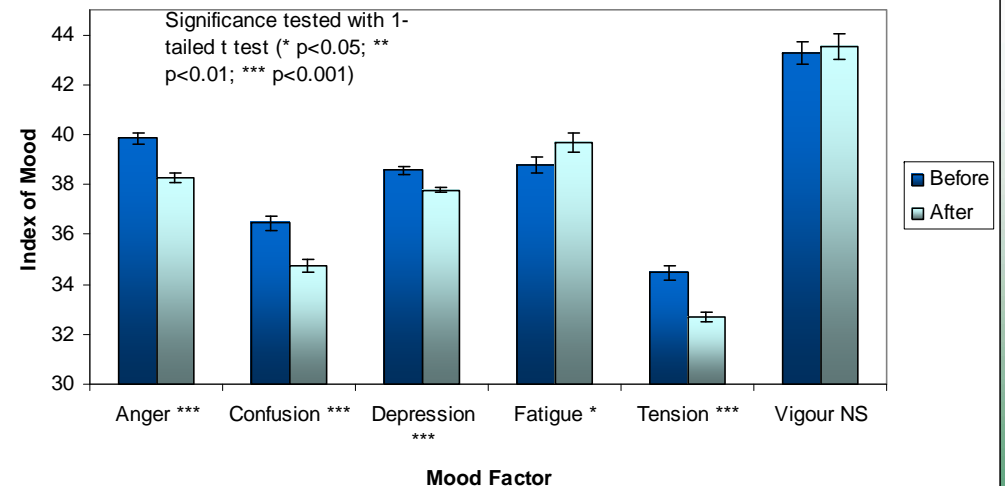
Figure 7: The amalgamated change in self esteem for all subjects following the activity



- Significant increase in self-esteem

- Significant reduction in anger, tension, depression and confusion

The overall mean change in the 6 mood factors of the 10 case studies



Other Findings



- No significant differences in improvements between 10 case studies
- Self-esteem and mood improved by gentle as well as vigorous exercise
- No differences between long and short visits to green spaces
- Cannot separate out benefits of green exercise from those arising from social capital

Pretty, Peacock et al, 2007, *JEPM* 50(2): 211-231

Pretty, Hine & Peacock, 2006, *The Biologist* 53(3): 143-148



Study 3: Wilderness Foundation 'TurnAround Project'

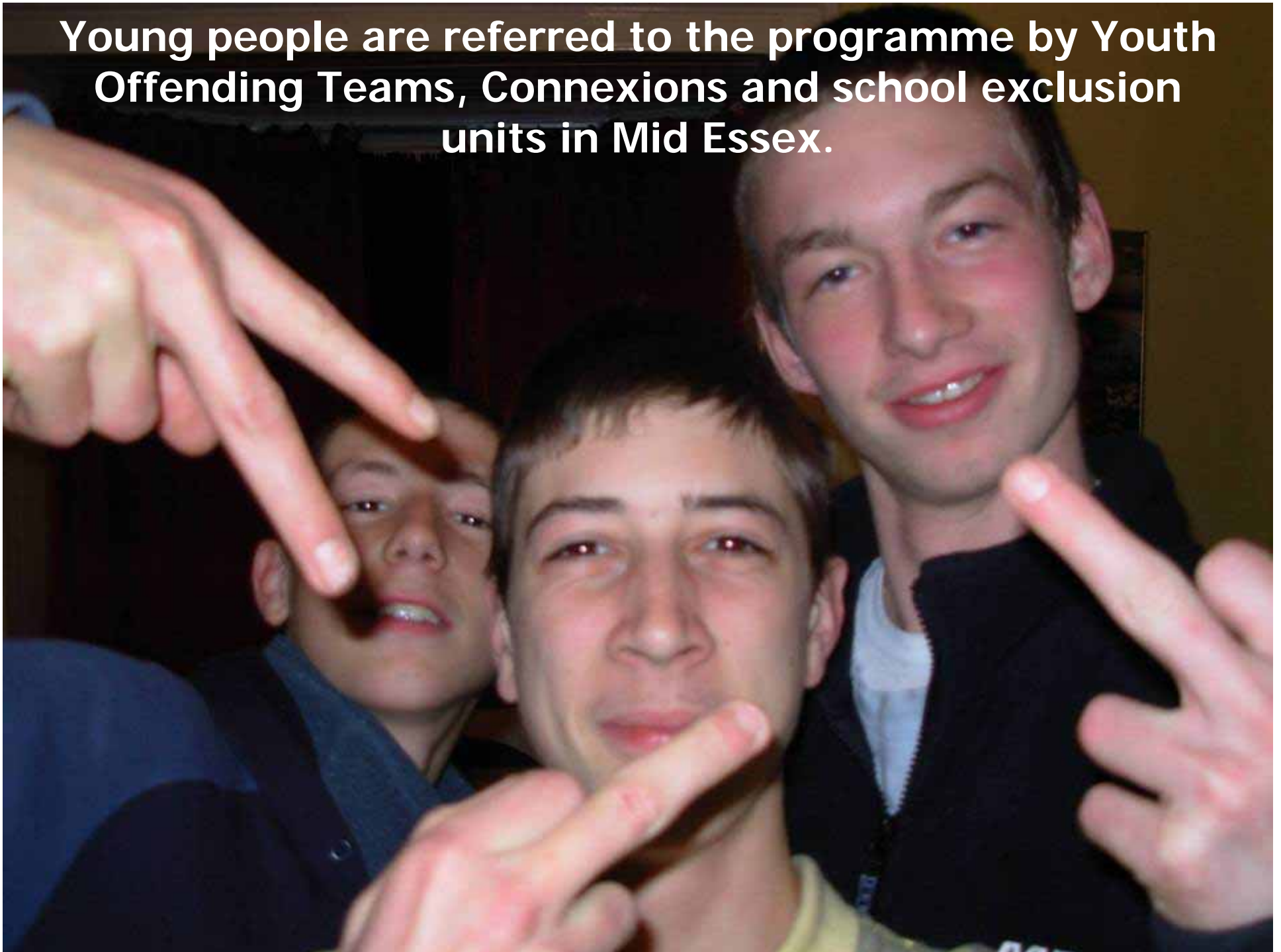


September 2007



- 9 month personal development project
- Aim – to encourage disaffected young people to make long term positive changes
- Uses power of nature as catalyst for change
- Combines use of wilderness trails, monthly personal development workshops and one to one life coaching
- Primary goal – to build self-esteem

Young people are referred to the programme by Youth Offending Teams, Connexions and school exclusion units in Mid Essex.





Referral histories of young participants include theft, shop lifting, common assault and violent behaviour, criminal damage, substance abuse, school exclusion, poor family relationships and lack of anger management.

Ages varied between 15 and 17 years of age



**Developing goals – personal awareness
through drawing shields**

see myself

Fuck up



now I think others will see me

waster
outcast
loud mouth
A drunk
narc
angry



Successful
calm
friendly



how I would like 2 b seen

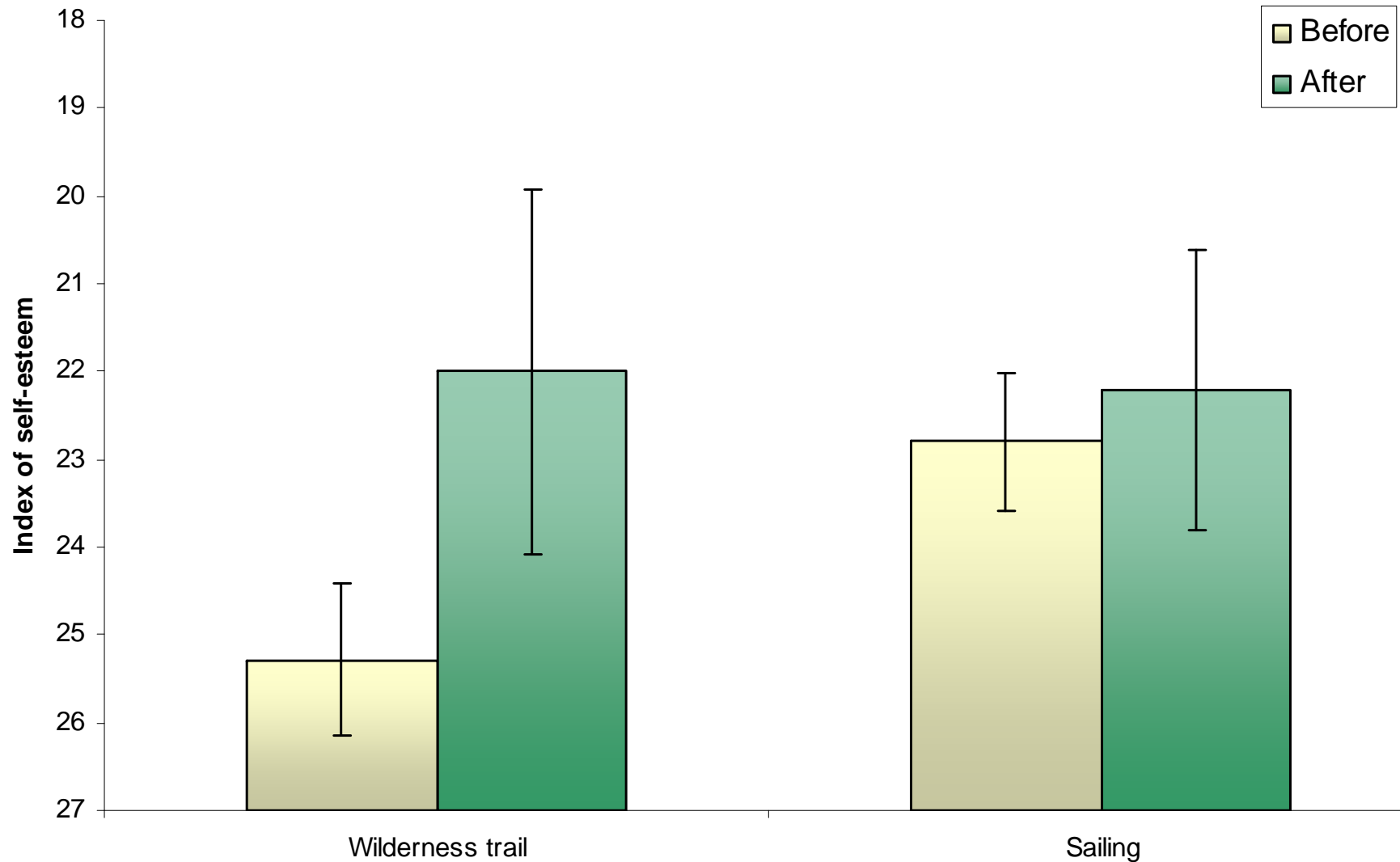


Something I would like 2 see in the future

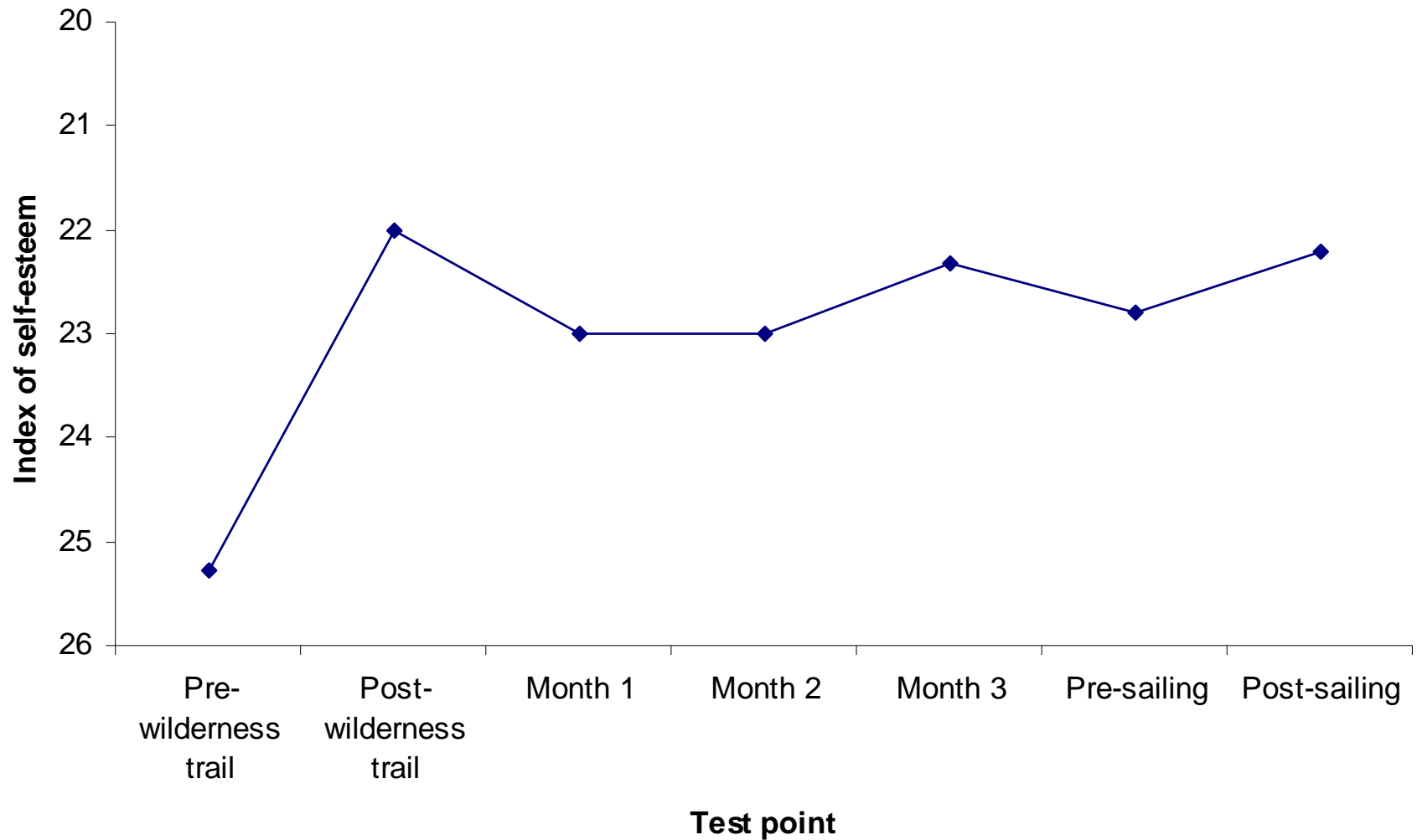


Building connections – with each other – and the outdoors

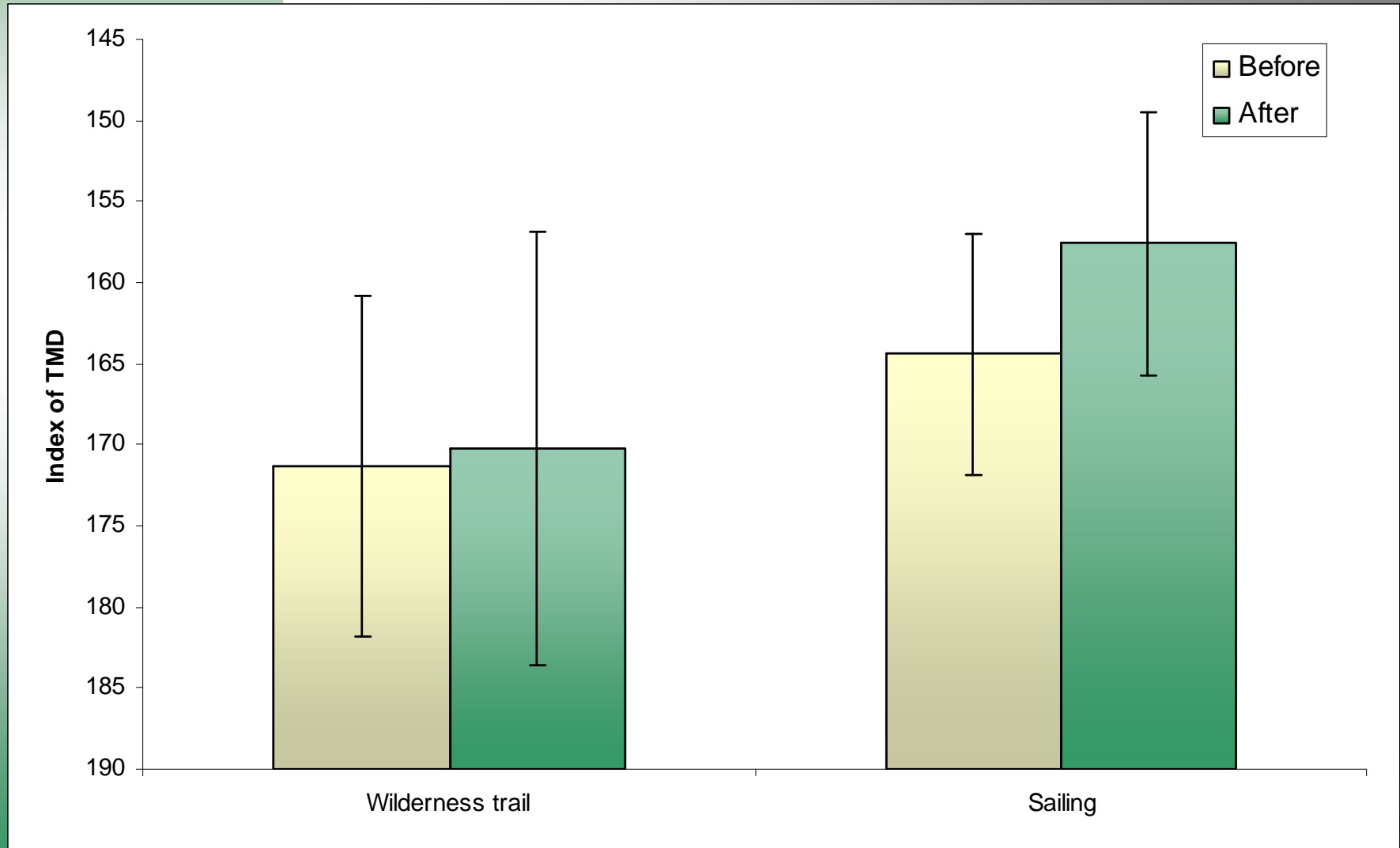
Change in Self-Esteem after Participating in the Wilderness Trails



Change in Self-Esteem Scores During Project



Change in Total Mood Disturbance after Participating in Both Trails



Study 4: The Green Agenda for Mental Health



Aims of Study:

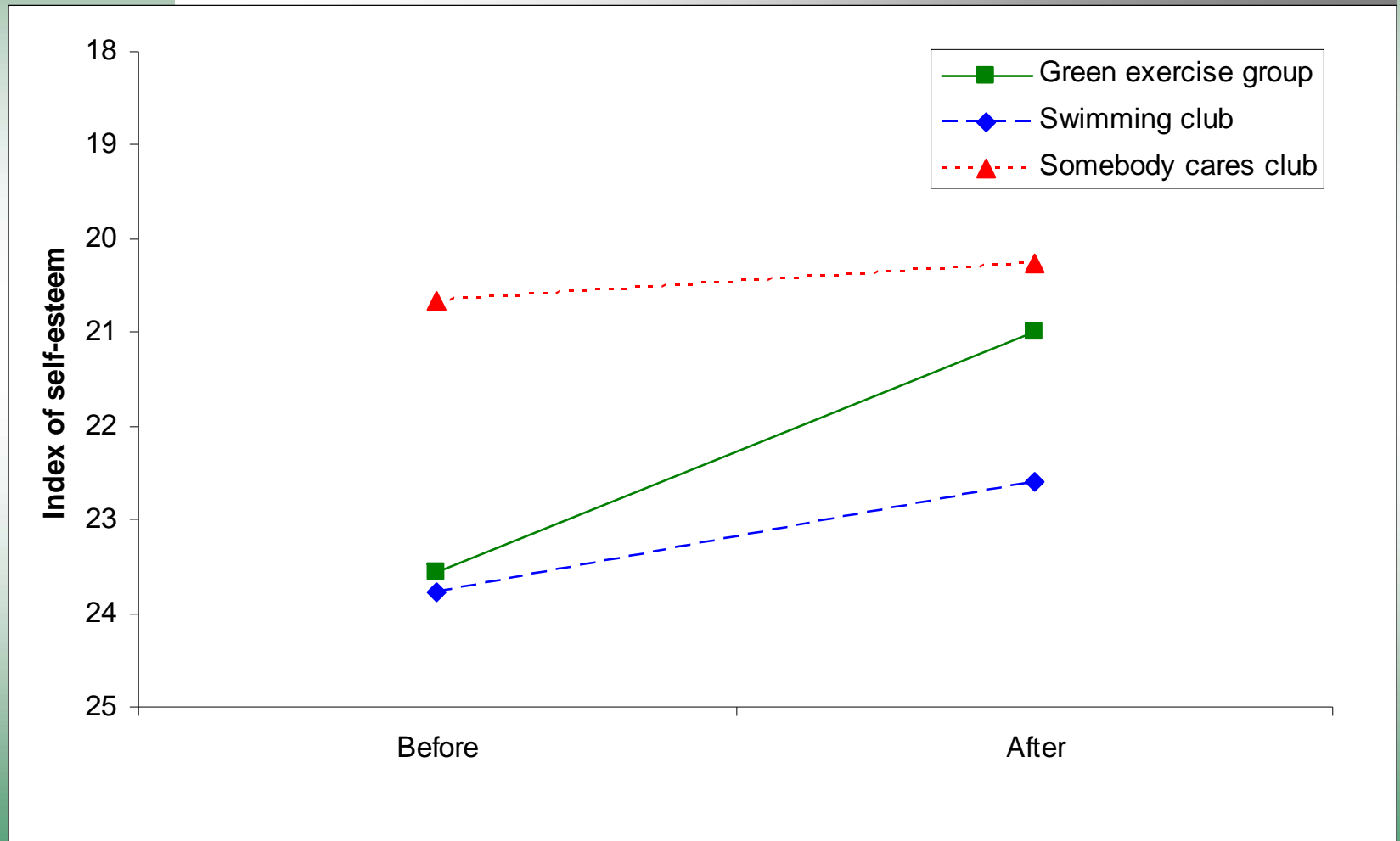
- Assess therapeutic properties of green exercise for individuals presenting some sort of health challenge
- Evaluate effectiveness of a new 6 week green exercise intervention programme on psychological health parameters
- Compare findings to 2 other existing programmes not involving green exercise
- All groups involved members of Local Mind Associations
 1. Green Exercise group (exercise x outdoor environment - greenspaces)
 2. Swimming group (exercise x indoor environment)
 3. Somebody Cares Club (indoor environment x no exercise)



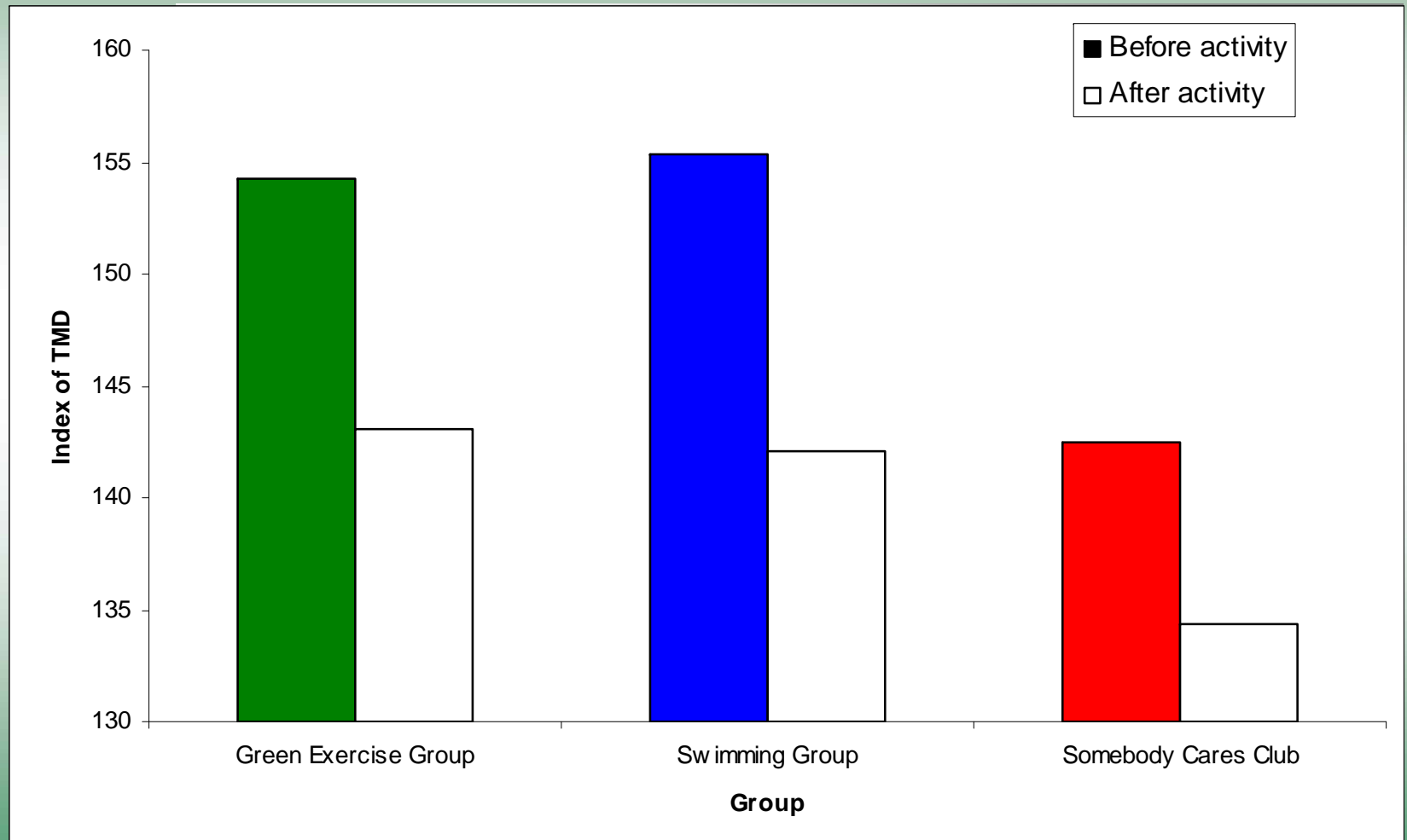
Participant Data and Design

- 53 Mind group members (20 male; 33 female)
- 21-83 yrs; mean age 53yrs
- Participants attended sessions every week or as many as they could within the 6 weeks
- Measured self-esteem and mood pre and post each session

Changes in Self-Esteem in the Three Groups

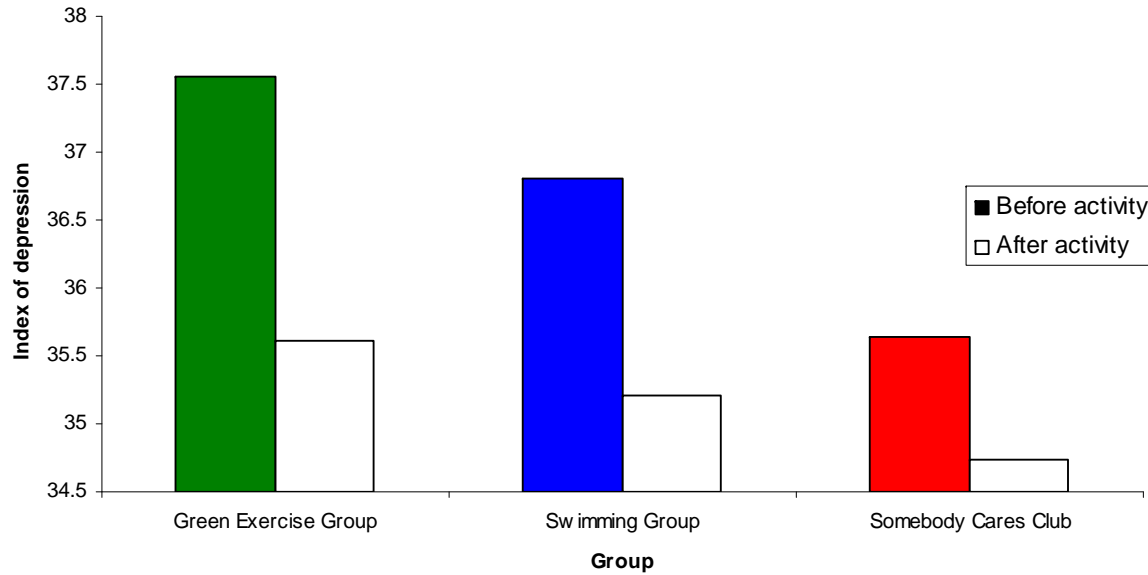


Change in Total Mood Disturbance in the Three Groups



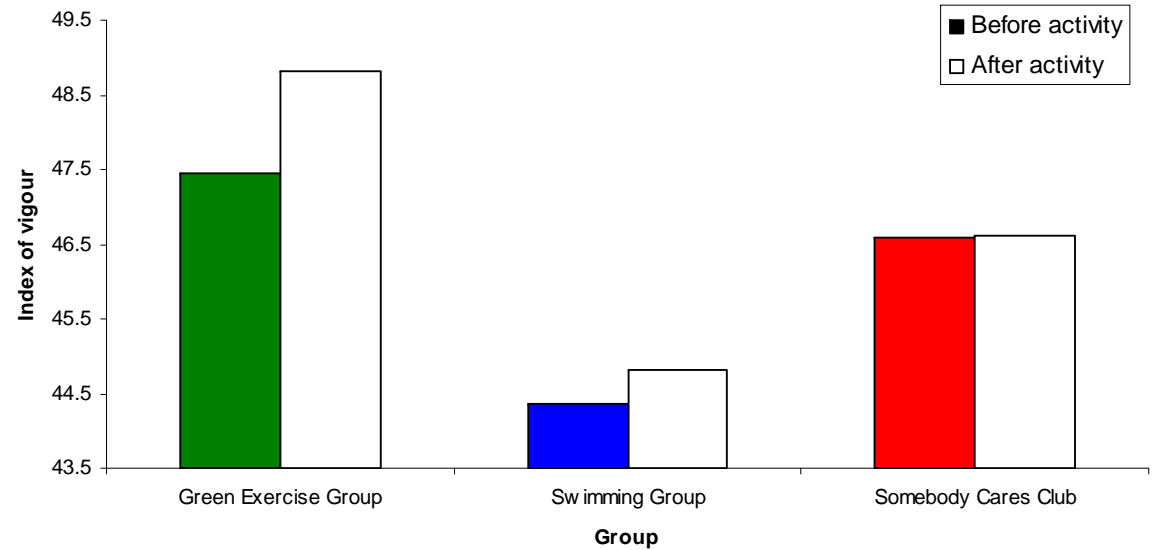
Depression

Figure 3: Change in levels of depression in the three groups




Vigour

Figure 4: Change in levels of vigour in the three groups





Other Key Findings

- 
- Members who attended all 6 sessions reported higher self-esteem and overall mood than those who attended less
 - GE group experienced the most number of participant increases in self-esteem overall
 - Importance of social contact



SOCIAL
NETWORKS

Green Exercise Overall Findings



- 1850 subjects across UK
- Three health outcomes
 1. Improvement of psychological well-being
 2. Generation of physical benefits
 3. Facilitation of social networks and connectivity
- Effects
 - 2 out of 3 people improved self-esteem
 - 2 out of 3 people improved total mood
 - 3 out of 4 people less depressed, tense and angry

A Dose of Nature?

Figure 6a: Dose response data for the effect of exposure duration on self-esteem

(*p<0.01; **p<0.001; ***p<0.0001)

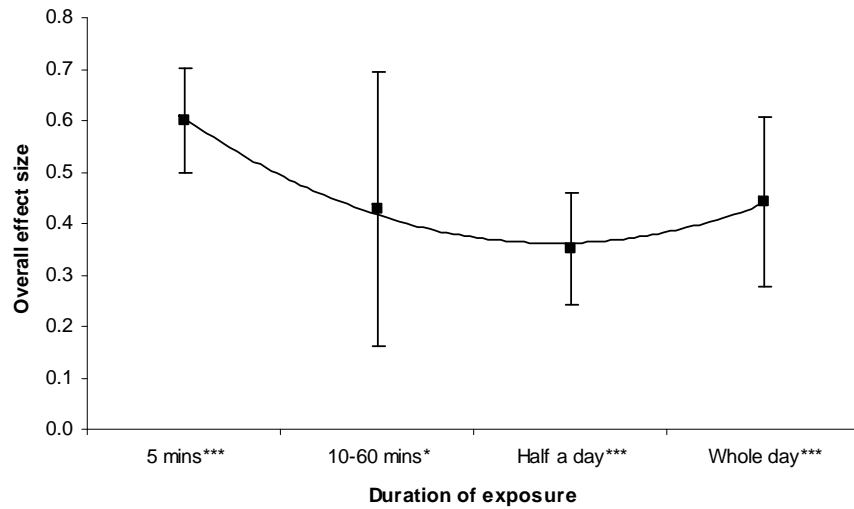


Figure 6b: Dose response data for the effect of exposure duration on TMD

(*p<0.01; **p<0.001; ***p<0.0001)

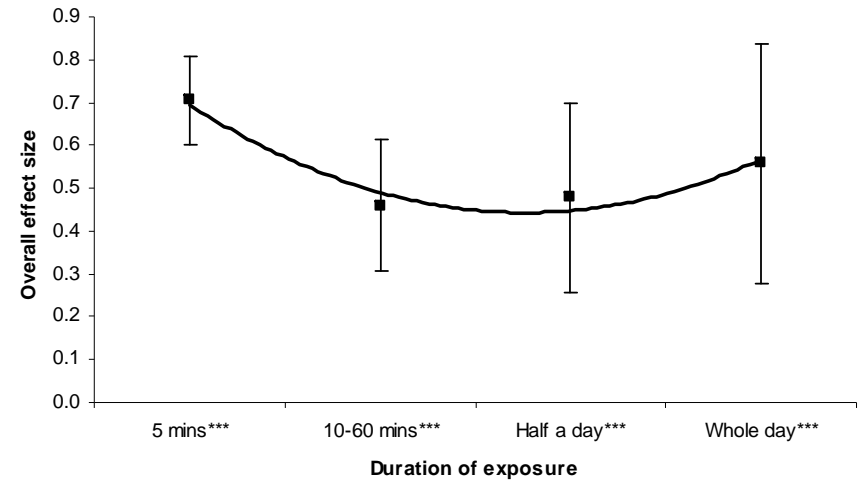


Figure 5a: Dose response data for the effect of exercise intensity on self-esteem

(*p<0.01; **p<0.001; ***p<0.0001)

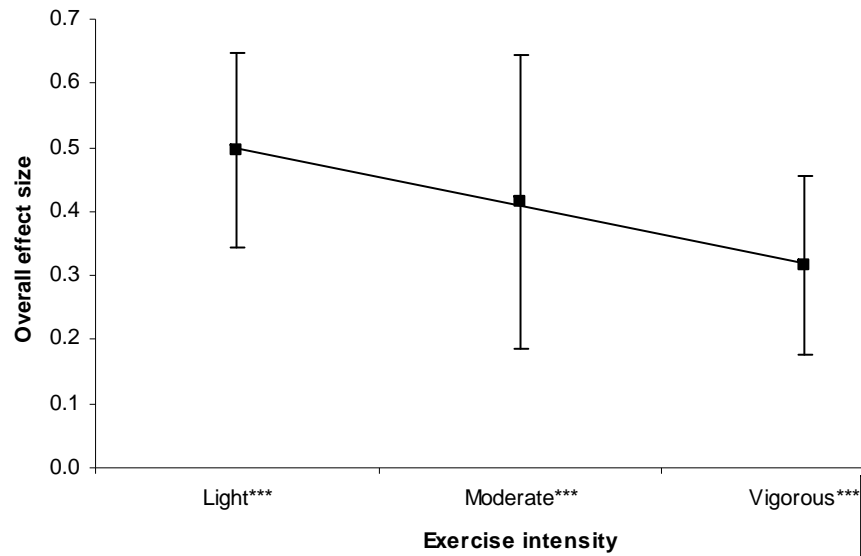
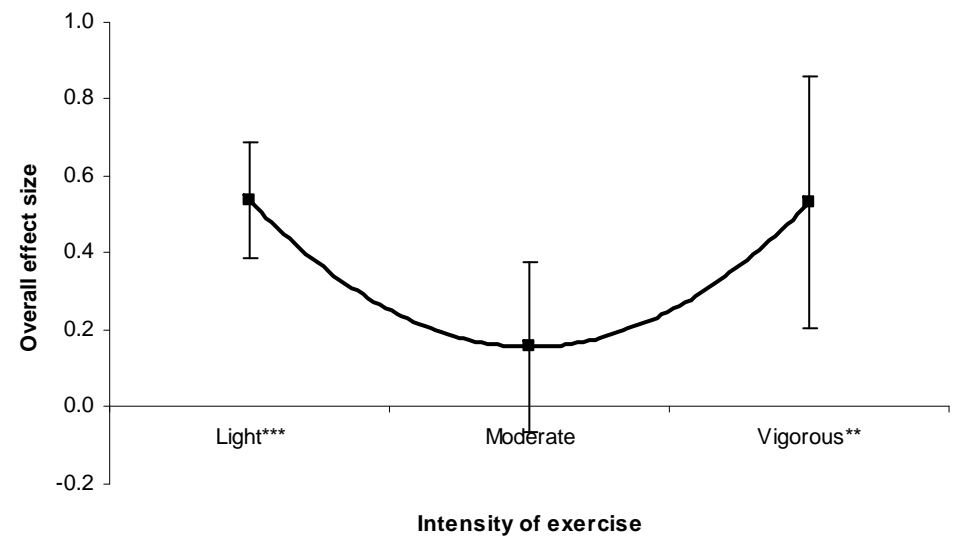


Figure 5b: Dose response data for the effect of exercise intensity on TMD

(*p<0.01; **p<0.001; ***p<0.0001)





We Now Know That...



- All natural places bring mental health benefits
 - From nearby nature to countrysides to wildlands
- Nature – physical activity is likely and easy, bringing physical health benefits
- All types of people (age, gender, social groups, ethnic groups) benefit,
 - But vulnerable, ill, disaffected and disadvantaged seem to benefit more
 - Green exercise is more effective for people who start with poorer mental health

Conclusions



- Need to think of **Natural Health Service** to complement NHS
 - Green places can be therapeutic
- Green Exercise suggests role for **Green Care** and **Green Design**
- So...
 - Go out more
 - Make it creative (free-range children)
 - Self-medicate with nature
 - Persuade doctors and public
 - Incorporate more green views and greenspace in urban design

“I can go into the hills and enjoy peace and quiet, the exercise and relax. My troubles take a back seat on a day like today”

