



Growing Healthier Humans or 'How Plants Affect People's Health'

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"Everybody needs
beauty as well as
bread, places to play in
and pray in, where
Nature may heal and
cheer and give strength
to body and soul alike."



John Muir (1838-1914)
Founder of the Sierra Club



Environment and wellbeing:

Wellbeing depends on:

- the natural environment
- the human made environment
- social arrangements (families, social networks, associations, institutions, economies)
- human consciousness

(Australian Bureau of Statistics, 2001 p. 6)

Wellbeing includes:

- satisfactory human relationships,
- meaningful occupation,
- opportunities for:
 - contact with nature,
 - creative expression, &
 - making a positive contribution to human society

(Furnass, 1996)



Environmental degradation:

- Humans are dependent physiologically on nature (Boyden, 1992)
- > 25% of world's disease burden is attributable to environmental factors (World Health Organisation, 2005)

- Climate change to affect millions via:

- Malnutrition & consequent disorders
- Deaths, disease & injury due to heat waves, flood, storms, fires & droughts
- Increased diarrhoeal disease
- Increased cardio-respiratory disease
- Altered distribution of infectious

disease vectors (IPCC 2007 p. 7)



www.undispatch.com/archives/2005/08/index.html



Environmental deprivation:

- Humans are dependent psychologically on nature (Wilson, 1984; Kellert & Wilson, 1993)



Viewing nature



Contact with plants



Being in nature



Contact with animals



Humans require contact with nature:

- Explained by 'biophilia hypothesis' (Wilson 1984)
- Supported by anecdotal evidence – popularity of pets, flowers
- Supported by empirical evidence – no. of visits; spending on gardens; restorative experiences & environments
- Plants & gardens as a means of healing – both through *observation & participation*



Gardens, green spaces & health:

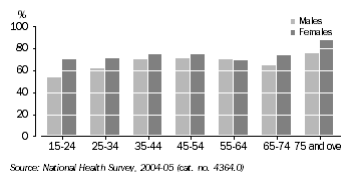
- Gardening among the most popular leisure pursuits (American College of Sports Medicine, 2004)
- Gardening provides opportunities for beneficial physical activity (Nieman 2003)
- Parks may offer only chance for “substantial psychological benefits” of nature contact (Bedimo-Rung et al., 2005 p. 161)
- ↑ destinations (e.g. parks) within 400m. → exercise (Hoehner et al., 2005)



Yet...

>50% of population (Mowen et al., 2007) & >53% of low SES residents (Leslie et al., 2008) visit parks only occasionally

Sedentary/low exercise levels, 2004-05 (ABS, 2006)



- Phys. inactivity → to risk of 6,400 deaths p.a. from CHD, diabetes & colon cancer & 2,200 more from other conditions
- Direct costs of physical inactivity 1996 = \$377 million p.a. (DoHAC & ASC, 2000)



Natural views:

- Gall bladder patients recovered more quickly with a natural view (Ulrich, 1984)
- Natural environments foster recovery from mental fatigue & are 'restorative' (Kaplan, 1995)



Community gardens:

- Internationally, community gardens → personal & neighbourhood transformation
- Local community gardens celebrate cultural diversity, promote wellbeing & foster community cohesion



School gardens:

- Beneficial for:

- Capacity to work with others
- Self-confidence
- Care for living things
- Attitude to school
- Interpersonal relationships (peer & adult)
- Interest in environment/nature
- Interest in learning



(Maller & Townsend 2006)

- Expansion of kitchen garden program in schools (via Stephanie Alexander Kitchen Garden Foundation)



Volunteer 'gardening' – hands-on conservation activities:

- Physical health benefits
- Social health benefits:
 - Sense of comm^y & belonging
 - ↑ sense of safety & security for older people & for children
- Mental health benefits:
 - Shared fun “lifts the spirits”
 - serene environment → relaxation/calming effect
- Community pride & personal self esteem (Townsend, 2006)



Trust for Nature project:

- Study involved:
 - 51 TfN volunteers & matched 'controls'
 - 6 TfN groups in rural areas & on urban fringe
 - Quantitative & qualitative data collected on:
 - Perceived benefits they gain from involvement
 - Health service usage
 - Levels of social connectedness

(Moore, Townsend & Oldroyd, 2007)



Findings from TfN study:

	TfN	Controls	P-value
General health (1 = v. healthy, 5 = v. unhealthy)	1.7	1.9	0.028
Annual visits to GP (doctor) (1 = <1; 5 = >10)	2.0	2.9	0.013
Feeling safer in local comm ^y (1= always, 5 = never)	1.0	1.3	0.001
Sense of belonging (1 = str'gly agree, 5 = str. dis.)	1.4	1.7	0.010
Attracted to living here (1 = str. ag., 5 = str. dis.)	1.2	1.5	0.040
Work to impr. comm ^y (1 = str. ag., 5 = str. dis.)	1.3	1.8	0.005
Opportunity to use skills (1 = always, 5 = never)	1.4	1.8	0.001



'Feel Blue, Touch Green':

- Participants:
 - Experienced improvement in emotional, mental & physical health
 - Developed
 - Skills
 - Pro-environmental attitudes & actions
 - Connections with others
 - Connections with their ecological context



Public 'gardens' - parks & open spaces:

Social connections



Social inclusion



Social & cultural wellbeing



Cross cultural communication



Inter-generational sharing





“How fair is a garden amid the trials and passions of existence.”



Benjamin Disraeli

