

Education and debate

Pet ownership and human health: a brief review of evidence and issues

June McNicholas, Andrew Gilbey, Ann Rennie, Sam Ahmedzai, Jo-Ann Dono, Elizabeth Ormerod

Research into the association between pet ownership and human health has produced intriguing, although frequently contradictory, results often raising uncertainty as to whether pet ownership is advisable on health grounds

Croit Cullach,
Durnamuck,
Dundonnell,
Ross-shire
June McNicholas
psychologist

Massey University,
New Zealand
Andrew Gilbey
lecturer

Society for
Companion Animal
Studies, Blue Cross,
Burford, Oxon

Ann Rennie
general practitioner

Jo-Ann Dono
director

Elizabeth Ormerod
veterinary surgeon

Royal Hallamshire
Hospital, University
of Sheffield

Sam Ahmedzai
*professor of palliative
medicine*

Correspondence to:
J McNicholas june@cullach.fsnet.co.uk

BMJ 2005;331:1252-5

The question of whether someone should own a pet is never as simple as whether that pet has a measurably beneficial or detrimental effect on the owner's physical health. The emotional bond between owner and pet can be as intense as that in many human relationships and may confer similar psychological benefits. Death of a pet can cause grief similar to that in human bereavement, whereas threat of loss of a pet may be met with blunt refusal and non-compliance with advice on health.

We examine the current evidence for a link between pet ownership and human health and discuss the importance of understanding the role of pets in people's lives.

Is pet ownership associated with human health?

Research dating from the 1980s popularised the view that pet ownership could have positive benefits on human health. Benefits ranged from higher survival rates from myocardial infarction¹; a significantly lower use of general practitioner services (prompting some researchers to speculate on considerable potential savings to health expenditure)²; a reduced risk of asthma and allergic rhinitis in children exposed to pet allergens during the first year of life^{3,4}; a reduced risk of cardiovascular disease⁵; and better physical and psychological wellbeing in community dwelling older people.⁶ No studies have found significant social or economic differences between people who do or do not have pets that would adequately explain differences in health outcome, leading to the belief that pet ownership itself is the primary cause of the reported benefits.

Although the research did much to raise awareness of the importance that people attach to their pets, recent studies have failed to replicate the benefits. A review of the association between pets and allergic sensitisation found inconsistent results for cat ownership between studies of similar design, whereas dog ownership seemed to have no effect or even protected against specific sensitisation to dog allergens and allergic sensitisation in general.⁷ Other studies on the subject suggest that exposure to pets may be beneficial provided that exposure is sufficient, as lower levels may enhance sensitisation whereas higher levels may

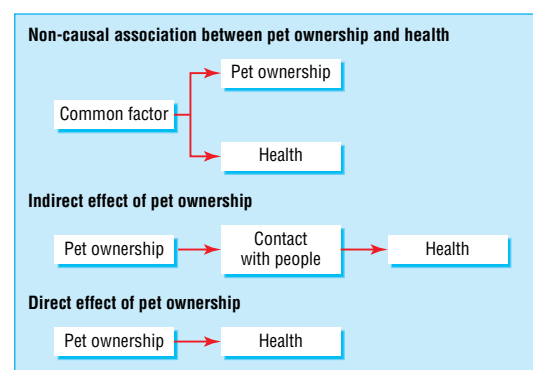


Fig 1 Three proposed mechanisms for association between pet ownership and health benefits for humans

protect against sensitisation.⁸ Yet others suggest that the effects may heavily depend on age at exposure and type of pet.⁹

Similarly, recent research has failed to support earlier findings that pet ownership is associated with a reduced risk of cardiovascular disease,¹⁰ a reduced use of general practitioner services,¹¹ or any psychological or physical benefits on health for community dwelling older people.¹² Research has, however, pointed to significantly less absenteeism from school through sickness among children who live with pets.¹¹

Do we need a broader definition of health?

The main issue may not be whether pet ownership per se confers measurable physical benefits but the role that pets have in individual people's lives—namely, the contributions of the pet to quality of life or the costs to wellbeing through a pet's death. This issue embraces a broader definition of health that encompasses the dimensions of wellbeing (physical and mental) and a sense of social integration.

Three potential mechanisms have been proposed to explain the association between pet ownership and benefits to human health (fig 1).¹³ The first is that there

P+ References w1 to w6 are on bmj.com



A Mundurucu boy carries his pet, a domesticated wild boar, for a daily cleansing swim in the Rio Canuma

is no real association between the two, rather that cofactors such as personality traits, age, and economic or health status impact on the decision to own a pet and thus produce an apparent link between pets and health. So far, however, evidence is lacking that any of these cofactors account for both health promoting attributes and propensity to own pets, suggesting that health benefits, when reported, may be attributable to some aspect of pet ownership.

The second proposal is that pets may enhance social interactions with other people, thus providing an indirect effect on wellbeing. Social contact has been long recognised as beneficial in that it alleviates feelings of loneliness and social isolation. Pets undoubtedly act as “social catalysts,” leading to greater social contact between people.¹⁴ These factors may be particularly important for those at risk of social isolation, such as elderly people or people with physical disabilities, who lack many of the opportunities for social interactions of their more able bodied peers.¹⁵

The third proposal focuses on ways in which pet ownership may exert a direct effect on human health and wellbeing through the nature of the relationship. Close human relationships have a powerful influence on wellbeing by providing emotional support. They may reduce perceptions of stressful events thus protecting against anxiety related illness, may give confidence that successful coping strategies can be found to deal with stress, and may enhance recovery from serious illness such as stroke, myocardial infarction, and cancer. These aspects of a relationship are collectively referred to as social support. Social relationships, or the lack of, seem to constitute a major risk factor for health, rivalling the effects of well established risk factors such as cigarette smoking, blood pressure, blood lipid concentrations, obesity, and lack of physical activity.¹⁶

The value of companionship

Companionship—a commonly stated reason for pet ownership—is regarded as theoretically distinct from social support in that it does not offer extrinsic support but provides intrinsic satisfactions, such as shared pleasure in recreation, relaxation, and uncensored spontaneity, all of which add to quality of life. Thus companionship may be important in fostering positive mental health on a day to day basis, whereas social support may be of particular value in buffering threats

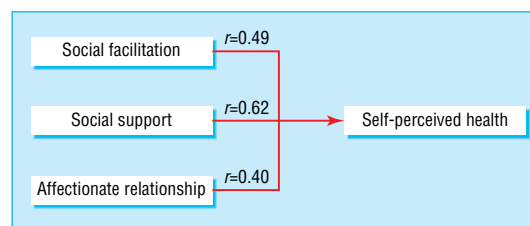


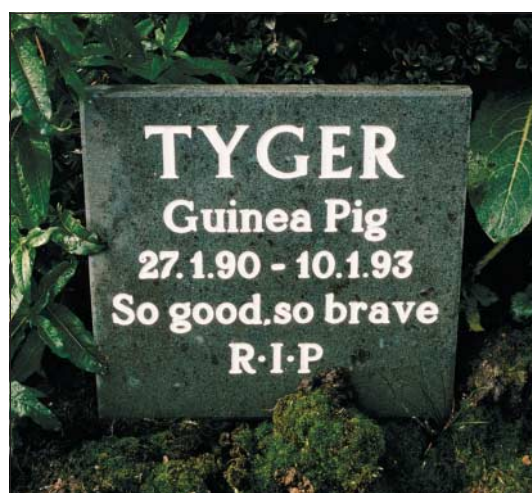
Fig 2 Correlations between questionnaire items measuring social facilitation, affectionate relationship, social support, and recipients' self perceived health in study on non-task related benefits of a trained assistance dog to people with physical disabilities. Correlations, derived from carrying out Pearson's correlation, are significant at $P < 0.05$

to mental health and wellbeing from real or perceived stressors. Figure 2 illustrates the inter-relationship between functions served by pet ownership and human health outcomes.¹⁵

Although research has primarily focused on human relationships as providing support and companionship, it is a short step to extrapolating these to pets. Studies have shown that the support from pets may mirror some of the elements of human relationships known to contribute to health.¹⁷ Although support from pets should not be regarded as a replacement for help from people, the fact that pets are not human confers certain advantages; the relationships are less subject to provider burnout or to fluctuations, and they do not impose a strain or cause concern about continuing stability. Relationships with pets seem to be of value in the early stages of bereavement^{w2} and after treatment for breast cancer.^{w3}

Why pet ownership should be taken seriously

The question of whether a person should acquire a pet or continue to own a pet requires careful consideration of the balance between benefits and potential problems. About half of households in the United Kingdom own pets.^{w4} Most are valued as family members. Conflict between health interests and pet ownership can cause non-compliance with advice on health. Some sources estimate that up to 70% of pet owners would disregard advice to get rid of a pet owing to allergies,^{w5} whereas reports abound of older people



Most pets are valued family members

Summary points

Over 90% of pet owners regard their pet as a valued family member

Reluctance to part with a pet may lead to non-compliance with health advice

Pets may be of particular value to older people and patients recovering from major illness

The death of a pet may cause great distress to owners, especially when the pet has associations with a deceased spouse or former lifestyle

Many people would welcome advice and support to enable them to reconcile or manage pet ownership and health problems whenever possible

avoiding medical care through fear of being admitted to hospital or residential care as this often means giving up a pet.⁶

The loss of a pet may be particularly distressing for owners if it was linked with a deceased spouse or if it offered companionship or social contact with people.¹⁸ For these reasons many people may appreciate help and advice on how to manage a pet in the event of a health problem in the family.

Animal welfare organisations cite allergies and the fear of zoonoses as common reasons for people giving up their pets. Yet in some cases this may not be necessary. Research from the University of West Virginia shows that simple, day to day hygiene and pet care can reduce allergic reactions by up to 95%.³ A recent review of pets in nursing homes provides a comprehensive list of potential health problems and steps that can be taken to avoid these.¹⁹

People do not own pets specifically to enhance their health, rather they value the relationship and the contribution their pet makes to their quality of life.²⁰ Greater understanding among health professionals is needed to assure people that they do not need to choose between pet ownership and compliance with health advice.

Contributors and sources: JMcN has special research interests in the influence of pet ownership on health and lifestyle. She was formerly based at the University of Warwick. Her current work is with Dogs for the Disabled, the Society for the Protection of Animals Abroad, and Cats Protection, UK. She is a member of the Society of Companion Animal Studies. AG gained his doc-

torate from the University of Warwick, researching the role of pets in the alleviation of loneliness. AR and SA are members of the Society of Companion Animal Studies. J-AD has a degree in psychology and is director of the Society of Companion Animal Studies. EO is chairwoman of the Society of Companion Animal Studies. References refer to primary sources located through MIMAS web of knowledge service/web of science records. JMcN wrote the article, with contributions from the other authors, and is guarantor.

Competing interests: JMcN received a research award, 2000-2, from Masterfoods UK to investigate the role of pets in children's health. AG was employed as a research assistant at University of Warwick, 1999-2003, funded by Waltham Centre for Animal Nutrition.

- 1 Friedmann E, Katcher AH, Lynch JJ, Thomas S. Animal companions and one year survival of patients after discharge from a coronary care unit. *Public Health Rep* 1980;95:307-12.
- 2 Headey B. Health benefits and health cost savings due to pets: preliminary estimates from an Australian national survey. *Soc Indic Res* 1998;1-11.
- 3 Ownby DR, Johnson CC, Peterson EL. Exposure to dogs and cats in the first year of life and risk of allergic sensitization at 6 to 7 years of age. *JAMA* 2002;288:963-72.
- 4 Nafstad P, Magnus P, Gaarder PI, Jaakola JJK. Exposure to pets and atopy-related diseases in the first 4 years of life. *Allergy* 2001;56:307-12.
- 5 Anderson WP, Reid CM, Jennings GL. Pet ownership and risk factors for cardiovascular disease. *Med J Aust* 1992;157:298-301.
- 6 Raina P, Waltner-Toews D, Bonnett B, Woodward C, Abernathy T. Influence of companion animals on the physical and psychological health of older people: an analysis of a one-year longitudinal study. *J Am Geriatr Soc* 1999;47:323-9.
- 7 Simpson A, Custovic A. Pets and the development of allergic sensitization. *Curr Allergy Asthma Rep* 2005;5:212-20.
- 8 Frew AJ. Advances in environmental and occupational diseases 2004. *J Allergy Clin Immunol* 2005;115:1197-202.
- 9 Behrens T, Maziak W, Weiland SK, Rzehak P, Siebert E, Keil U. Symptoms of asthma and the home environment. The ISAAC I and III cross-sectional surveys in Munster, Germany. *Int Arch Allergy Immunol* 2005;137:53-61.
- 10 Parslow RA, Jorm AF. Pet ownership and risk factors for cardiovascular disease: another look. *Med J Aust* 2003;179:466-8.
- 11 Parslow RA, Jorm AF. The impact of pet ownership on health and health service use: results from a community samples of Australians aged 40 to 44 years. *Anthrozoos* 2003;16:43-56.
- 12 Parslow RA, Jorm AF, Christensen H, Rodgers B, Jacomb P. Pet ownership and health in older adults: findings from a survey of 2551 community based Australians aged 60-64. *Gerontology* 2005;51:40-7.
- 13 McNicholas J, Murray A. The benefits of pets for older people: a review. In: Dono J, Ormerod E, eds. *Older people and pets: a comprehensive guide*. Oxford: Society for Companion Animal Studies Publications, 2005.
- 14 McNicholas J, Collis GM. Dogs as catalysts for social interactions: robustness of the effect. *Br J Psychol* 2000;91:61-70.
- 15 Lane DR, McNicholas J, Collis GM. Dogs for the disabled: benefits to recipients and welfare of the dog. *Appl Anim Behav Sci* 1998;59:49-60.
- 16 House JS, Landis KR, Umberson D. Social relationships and health. *Science* 1988;241:540-4.
- 17 Collis GM, McNicholas J. A theoretical basis for health benefits of pet ownership: attachment versus psychological support. In: Wilson C, Turner D, eds. *Companion animals and human health*. Thousand Oaks, CA: Sage, 1998:105-22.
- 18 McNicholas J, Collis GM. The end of a relationship: coping with pet loss. In: Robinson I, ed. *The Waltham book of human-companion animal interactions*. Oxford: Pergamon Press, 1995:127-43.
- 19 Guay DR. Pet-assisted therapy in the nursing home setting: potential for zoonosis. *Am J Infect Control* 2001;29:178-86.
- 20 Podbercek AL, Paul ES, Serpell JA, eds. *Companion animals and us*. Cambridge: Cambridge University Press, 2000.

(Accepted 4 November 2005)

Commentary: Pets—pleasures and problems

Richard Mayon-White

Department of
Primary Health
Care, Institute of
Health Sciences,
University of
Oxford, Oxford
OX3 7LF
Richard
Mayon-White
consultant
epidemiologist

richard.mayon-white@
dphpc.ox.ac.uk

Good health is more than the absence of disease, and the review by McNicholas and colleagues makes a strong argument that the companionship of pets contributes to wellbeing.¹ People decide to keep pets for reasons that go far beyond health, and there are social benefits when animals promote conversation and friendship. The debate about health effects of pet ownership has focused on the major problems of cardiovascular disease, mental health, and allergy. A point to add to the review is that the benefits partly depend on the type of animal. In a

prospective study of one year survival after a myocardial infarct, dog owners were more likely to survive than cat owners and people who did not own pets.² Although exercise from dog walking might be a factor, the improved survival was related to social support independent of physiological status.

On the fringes of the debate about health and pets are some unusual observations about benefits and hazards of pets. The ability of some dogs to give an early warning of an epileptic fit or a hypoglycaemia attack is