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GET A BUZZ FROM A BIKE

Australian Cyclist December 2000/January 2001
Kate Mytanwy explains how cycling can help lift depression

Normal muscular fatigue of the healthy body should be soon followed by a sense of well being and eager buoyancy, which to possess is to half master the ills of life

It is no secret that there has been a marked decrease in physical activity (PA) over the past decades within Australia. Correspondingly, has also been an increase in rates of psychological depression and more than a marked increase in the prescribing of antidepressant medications. In 1994 antidepressants cost the government \$55.4 million. In 1998 the cost rose to more than \$156 million. The prediction is that depression will be the second largest contributor to the world's disease burden by the year 2010. A recent Medical Journal of Australia article cited research by the Australian Institute of Health and Welfare. It stated that depression accounted for 8% of all the years lost to disability. Mental disorders overall were responsible for nearly 30% of the non fatal disease burden.

It has been estimated in a report by Professor Adrian Bauman for the organisation Active Australia that as little as 16% of the Australian population may currently be undertaking sufficient physical activity per week to achieve any health benefits.

Of course, psychological depression doesn't just cause mental anguish and reduced economic productivity. In an editorial in a March 1999 edition of the British Medical Journal, professor of psychiatry Timothy Dinan points to the physical consequences of depressive illness. Professor Dinan alerts to the increased risk of coronary artery

disease and decreases in bone density, as a result of the elevated levels of cortisol accompanying depression.

Could it be that there is a direct causative link between inactivity and, especially, depression? Further, could it be that by simply encouraging more people to take up regular PA of as little as 30 minutes a day most days of the week, both longer term and significantly lower rates depression could result. Could it be that other mental health problem might also likewise reduce and, furthermore, that people may even find themselves becoming more productive and happier?

The evidence on all accounts suggests a very resounding 'yes'. Yet, whilst mental health promotion and other policy documents point to the economic importance of improving society's mental health and reducing depression, little importance is seemingly paid to that which may well be one of the simplest and cost effective methods to achieve this. Medical workers and others in the health industry don't seem to be helping all that much either, according to one recent article published in the Medical Journal of Australia. The authors, including Professor Adrian Bauman, suggest that one possible reason for the lack of credence given to physical activity relates to 'clinical interest being driven by marketing forces'. They make a plea that both the medical media and clinical specialists need to be more enthusiastic in recommending physical activity.

This remainder of this article is an attempt to 1. briefly provide some of the general physical activity for mental health literature from the stance of biological, psychological and social perspectives . 2. demonstrate that bicycling may be the more preferred form of exercise (ie advantages over forms of exercise). 3. That by encouraging greater use of the bicycle may help to alleviate some of the adverse environmental a conditions which negatively impinge on human mental health.

How does physical activity work as an antidepressant?

PA acts to lift mood, produce a feeling of well being and reduce tension and anxiety. Short term benefits are

generally felt straight away, though optimum benefits may not be felt for several weeks after commencement. This is similar to the time needed for antidepressant medications to have their best effect too.

There are several biological theories which are commonly used to act for the mood altering benefits of exercise. These are summarised by Professor Larry Leith in his 1998 work book *Exercising your way to better mental health*. Leith, who conducted extensive research earlier this decade, describes the endorphin, monoamine and thermogenic hypotheses related to brain function which have been developed to date.

The details of more recent and ongoing research by an exercise science PhD student, here in Australia, were publicised in July. Mr Dan Dwyer, of Griffith University, has found a link with the brain substance serotonin. 'The point of my research was to identify how serotonin affects the brain when we exercise and what happens when we reach a higher level of fitness. My tests have found that when we exercise, our brains appear to build up a resistance to serotonin and so the body does not tire so easily', Mr Dwyer stated. 'It is known that the effects of serotonin are magnified in the brains of people who suffer from depression and this contributes to chronic lethargy. Our findings suggest that there could be strong benefit for people who suffer from depression to take up exercise as an adjunct therapy for the treatment of depression'.

Psychological theories have been developed as well. Physical activity provides distraction, or time out, from our worries and woes. It can also make us feel good about ourselves, because we have accomplished a task that is worthwhile. Larry Leith says that this boost to self confidence then carries over to build up mood. Some forms of exercise can also assist in developing support friendships. When we're exercising with someone regularly its also a possibility that we'll talk out our concerns. This offloading and sharing counters the build up of stress that occurs through isolation. Humans need humans!

In 1999 the WHO European Charter on Health and the

Environment recognised that 'Reliance on motorized transport, in particular road transport, continues to increase, resulting in adverse environmental and health effects'. These effects, moreover, alienate humans from humans in terms of needed contact with each other. Thus, is reduced the opportunity to talk out one's problems and to share the load. Separated by the noise and the barrier of dangerously congested streets, we become increasingly more insular, more isolated from those potential avenues of comfort and support which existed in days gone by. In the absence of simple and environmentally friendly transportation methods, such as bicycling and walking wherein contact with others is more likely than eg by the car, we become more likely alienated.

How much is necessary?

The minimum dose is generally seen to be about thirty minutes of moderate intensity exercise most days of the week. This doesn't have to be all at once and according to the Commonwealth Department of Health and Aged Care's National Physical Activity Guidelines can be accumulated in ten minute sessions. A survey of a small number of health promotion workers undertaken this year, indicated that an exercise induced high could be achieved in as little as 20 minutes of vigorous activity. Yet, a feeling of general well being can be accomplished with moderate level activity only.

Why bicycling?

While the evidence is far from conclusive, there is certainly a strong suggestion that cycling may be more beneficial in terms of mood enhancing effects than some other forms of exercise. Why should this be so? One reason given is that cycling, unlike for instance walking, incorporates both aerobic and anaerobic (resistance) activity together in a natural form. That in addition to the large muscle movement induced aerobic effects caused by legs going around and around, pulling or tugging at handlebars induces anaerobic ones. Anaerobic exercise, notably in the literature related to weightlifting, has been found to have antidepressant effects. So, perhaps it's the combination or

interaction of the two that makes people say that they "get buzz from a bike"?

Another possibility is that the benefit arises because bicycling is generally performed in conditions of exposure to natural light. The effect of light on mood has been studied extensively, especially in relation to a psychiatric condition called seasonal affective disorder. It appears that exercise performed in bright light is more effective than exercise performed in normal room light, according to a 1998 Finnish study and reported in the journal *psychological Medicine*. Yet a third possible reason is that cycling, in the normal course of events, doesn't have the associated stresses, strain and consequent pain that, for instance, jogging has. Lastly, bicycling need not cost very much, for the hip pocket conscious a matter of great happiness!

It is to be hoped that the National Depression Initiative, announced by the Federal Health Minister, Dr Michael Wooldridge earlier this year, will recognize the importance that physical activity generally, and bicycling in particular, can play in reducing this country's current plague of depression and ill health. The easy, and simple, solution may a far cheaper alternative to some currently employed.

Kate Mytanwy has spent many years working in Mental Health. Under her former name she was previously a Clinical Nurse Consultant in Psychiatry and Secretary of the NSW Mid North Coast Mental Health Community Consultative Committee. She has written previously for *Australian Cyclist* (1998 and 2000) and has a major interest in suicide prevention and in the promotion of physical activity for mental health reasons. Since early 1999 Kate has conducted an email list pertaining to the topic - see www.topica.com/lists/bicycle plus has a web page detailing some of the evidence and providing links to other sites (see sites.netscape.net/mytanwy/physical).

More recently she has established an email discussion group for workers in the health promotion and mental health promotion field. In 1998 she successfully submitted

for the NSW Healthy Country Communities grant; this resulted in the recently completed twelve month Physical Activity for Mental Health project in Coffs Harbour area, NSW.

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Gratitude is extended to Mr Paul Baxter for permission to use an extract of personal correspondence and to use the term 'Get a buzz from a bike' and to Ms Trish Davis, Senior Health Promotion Officer, Port Macquarie NSW.

Carroll, R.S. (1928) Chapter V1 (The penalty of inactivity) in The Mastery of Nervousness. Cornstalk Publishing Company: Sydney

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