

Research Article

An Ounce of Prevention with Exercise is Worth a Pound of Cure

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An Australian Institute of Health and Welfare publication being a web report, states that nearly two-thirds (63%) of adults were overweight or obese in 2014–15, while the percentage of children and adolescents whom are overweight or obese for the same time frame was one quarter (26%) [1,2]. Another Australian Institute of Health and Welfare publication states that the burden of type two diabetes is increasing and will lead the cause of disease burden by 2023 [3]. Research shows that overweight is associated with a diagnosis of diabetes [4]. The prevalence of diabetes is also increasing as there is an association of diabetes with age and there is an increasingly greater percentage of elderly people within the Australian population and this is also going to increase in future years [4,5]. Koye and colleagues examined the association between diabetes and disability in Australians aged 60 years and over, whom were recruited to the Australian Diabetes, Obesity and Lifestyle study (AusDiab) cohort [6]. Disability was measured using the Katz questionnaire and the cohort included 2373 persons. 65% of the diabetes-associated odds of disability at 12 years was explained by body mass index and cardiometabolic factors together and hence interventions that target weight control maybe preventative.

An additional Ausdiab study publication found that approximately one-fifth of those with normal weight or overweight progressed to a higher weight category within 5 years [7]. These findings suggest that normal-weight adults will constitute less than a third of the population by 2025, and that obesity prevalence will have increased by 65 %.

Prevention is the key and includes physical activity and exercise programs for weight reduction, weight maintenance and cardiovascular disease risk reduction. In addition, there are added benefits that accrue such as reduction in pain and improved joint mobility associated with joint diseases like arthritis, as well as improved strength which can aid balance and may reduce the likelihood of falls. In fact, one in eleven Australians (9%) have osteoarthritis, approximately 2.1 million people in 2014-5 [8]. Also, is the fact that persons with arthritis are more likely to be obese, with one in three people with arthritis being obese (32%), compared with one in four people without arthritis (22%) [9].

The Australian Diabetes, Obesity and Lifestyle study (AusDiab) report in chapter seven includes data and summaries on physical activity rates in people divided into age cohorts [35-44], [45-54], [55-64], [65-74] and >75 years [10]. This data was for the years 2011-2. Selected participants were given an Actigraph® GT3X+ accelerometer and an activPAL3® inclinometer which they wore for seven consecutive days. The percentage of people whom achieved moderate [≥ 150 minutes of exercise in the previous week] or vigorous [≥ 75 minutes of exercise in the previous week], ranged from 19% in those > 75 years to 40% in those in the youngest age cohort included [10].

Systematic review evidence demonstrates that exercise is effective for weight loss [11]. This meta-analysis identified pedometer-based walking studies and included a search of six electronic databases. Nine

studies published after 1995, that were either randomized controlled trials or prospective cohort studies that had a sample size from 15 to 106 met the inclusion criteria. The pooled mean weight change estimate from baseline combining data from all 9 cohorts was -1.27 kg (95% CI -1.85 to -0.70 kg); [fixed-effects model]. The average weight loss was 0.05 kg/ week. In summary these programs result in a modest weight loss with longer programs resulting in more weight loss.

The Australia Bureau of Statistics collated data on physical activity participation rates as part of the Australian Health Survey and results were that 43% of adults meet the “sufficiently active” threshold, and 53% of young adults [18–24-year olds] were classed as sufficiently active [12]. Results from the adult pedometer study were that average steps recorded / day was 7,400 steps. In fact, less than one in five adults (19%) recorded 10,000 steps per day on average. A pedometer study done in children and young people found that the average steps / day was 9140 steps / day. In addition, the percentage of children whom reached 12,000 steps/day for different age groups was 22% for those 5-8 years old, 24% for 9-11 year olds and 7% for 15-17 year olds.

While these devices show effectiveness [11] in fact Hilton's survey on fitness trackers that was presented as an abstract at the Public Health Association of Australia conference in Alice Springs found in fact pedometer usage to be quite low amongst those surveyed [13]. The survey that asked questions on whether the survey respondent had heard of the fitness device, and then if they had used it was emailed, posted or hand delivered to 100 persons, 70 of whom returned the survey. Eight different fitness trackers were included in the survey [fitbit, running keeper, distance meter pro, go walk pedometer, iwalk, pacer for the iphone, itreadmill and my weight loss coach]. 84% of people surveyed had heard of the fitbit, but less than 20% of people had heard of any of the others. In terms of usage of the pedometers or fitness trackers, 36% of people had used the fitbit, but for each of the others, it was less than 10% of people whom had utilised any of the others [13].

There are numerous programs and initiatives across Australia designed to increase a person's level of physical activity [14,15]. While the global children's challenge which was designed for children has now ceased operation the corporate program named the global challenge is still functioning. Employees whom work at organisations whom register, can participate in teams of seven, for 100 days, in a

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program designed to improve both physical and psychological health. There is up to 53,000 teams from 1,500 of the world's most respected companies. The fitness trackers used in this program can include the fitbit, the garmin, the jawbone, the misfit and microsoft.

Across the globe there are many organisations within many countries that hold red dress events. In 2005, the Singapore Heart Foundation launched its Go Red for Women campaign [16]. The Heart Association of Thailand [17] and the Taiwan Heart Foundation [18] commenced campaigns during World Heart Day 2011. Included were diet, exercise and lifestyle advice, health checks and screening, personal stories and red dress competitions. In Singapore there were also competitions for local fashion designers while Thailand included Chi Kong exercises and the Taiwan group had fairs at Taipei and Taichung. The Indonesian Heart Foundation organised the 'Perempuan Waspadalah' campaign [19]. The Emirates Cardiac Society organises Go Red for Women shopping centre activities [20]. In Deira City Centre, Dubai, United Arab Emirates, was named a 2011 Gold Award competition winner. Designed to raise awareness of heart disease among Dubai women, included was a free heart health facility, and a Red Dress Gallery creation involving retailers and an online Facebook campaign [tag line of 'This is not a red dress, it's a red alert']. 1,300 women were tested and mammoth \$57,000 in sponsorship was raised. In America <https://www.goredforwomen.org/> much of the campaign is via facebook [#GoRedGetFit] [21].

In Australia the Heart Foundation organise many events, forums, training days, fundraising gala balls, promotions, showcases, fun runs, breakfast and lunch events, and other community activities such as walking groups [22]. The Go Red for Women event focuses upon education and information that targets women, with the aim to provide incentives and give reasons why women should partake in exercise and physical activity. Personal stories are written and are uploaded to the website, many of which are very moving and confronting.

In 2010, Fitness First [23] [Knox City] in partnership with the Heart Foundation set up a fitness challenge at Knox City Shopping Centre being a promotion for the Go Red event. The challenge included a bike, a stepper and a rowing machine. Women were invited to try this apparatus. In many cases women were not dressed suitably to try this equipment, so many may have walked on by, preferring to focus upon the aim of a fashion shopping spree. However, others whom did stop hopped on the equipment to attempt a good result. I was there to drop my daughter at a party, but was dressed suitably such that I put in my best effort on the apparatus. I believe the equipment was set up for a few days. After this, I received a call to say that I had the best result of the people whom attempted the fitness challenge and hence I'd won a Westfield gift card and a fitness first one-month membership. In 2011, I had a professional red dress photograph taken by Dean Williams [Smart Photography]. I supplied this to Curves [24] at Ashburton whom in 2011 had taken over partnership of the promotion from Fitness First. I also supplied some red dress apparel, a mannequin and articles I'd written. They were pleased with this display and indicated that there was interest from people attending the centre. This Ashburton Centre subsequently closed down.

In 2015 in Australia I uploaded a new facebook photograph (hashtag [#wewillbered]). I also participated in a promotional day [wearing an Alex Perry red dress], a day that was organised by the World Heart Federation as part of the World Congress of Cardiology in 2014 [25]. In 2017, within Australia the campaign was re-located to a website; www.invisiblevisible.org.au. Various photographs are shown in the next column. Figure 1

In 2017, the author had two new red dress professional photographs taken by Verve Portraits, one of herself and her daughter and one just of her daughter [26]. Possible taglines that could be used in conjunction with these photographs are; 'when in doubt wear red'

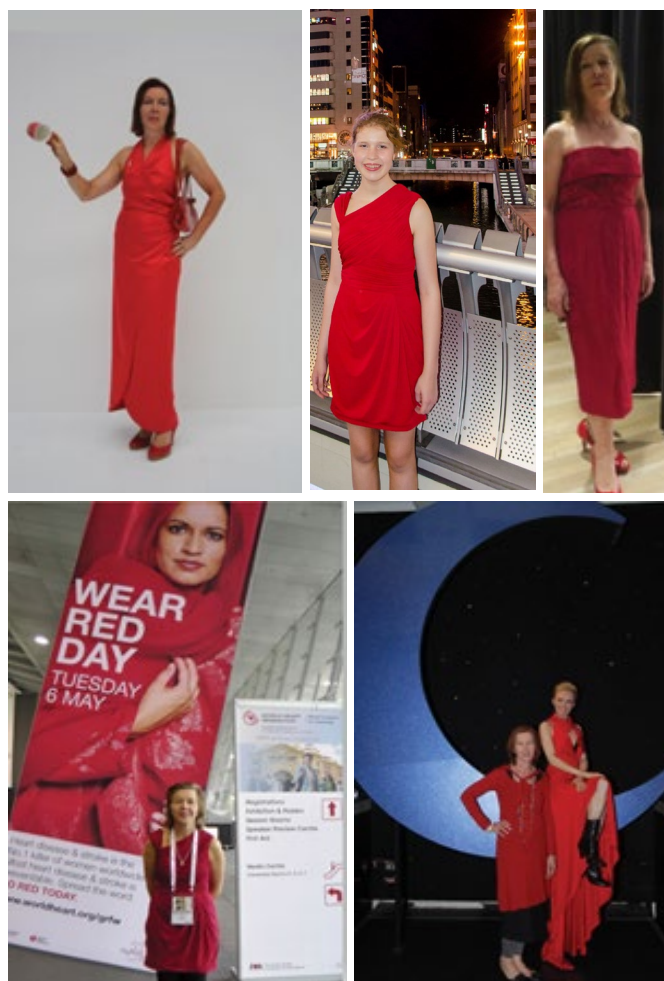


Figure 1:

[quote by Bill Blass] and 'there is a shade of red for every woman' [quote by Audrey Hepburn]. Figure 2

In fact, a comprehensive publication on the red dress campaign in terms of the social marketing and branding aspects of these campaigns was done by Long and colleagues [27].

According to a report compiled by Vic Health, titled physical activity and sedentary behaviour [evidence summary], physical inactivity is responsible for more than 5 million deaths globally / year [28,29]. Reducing the prevalence of inactivity in Australian adults by 10% would result in a 15% reduction in deaths / year attributable to physical inactivity and it would reduce disability adjusted life years lost by 14% [28,30]. This Vic Health report states that less than a third of Australians over 15 years were participating in enough physical activity to benefit their health. Over two thirds were either sedentary or had low levels of exercise and this was based upon data from the Australian Bureau of Statistics.

The global burden of disease study is a comprehensive regional and global research program that assesses mortality and disability from major diseases, injuries and risk factors [31]. People who achieve total physical activity levels several times higher than the current recommended minimum level have a significant reduction in the risk of the five diseases studied [32]. 174 articles were identified including 35 for breast cancer, 19 for colon cancer, 55 for diabetes, 43 for ischemic heart disease, and 26 for ischemic stroke (some articles included multiple outcomes). Compared with insufficiently active individuals (total activity <600 MET minutes/week), the risk reduction for those in the highly active category (≥8000 MET minutes/week) was 14%



Figure 2:

(relative risk 0.863, 95% uncertainty interval 0.829 to 0.900) for breast cancer; 21% (0.789, 0.735 to 0.850) for colon cancer; 28% (0.722, 0.678 to 0.768) for diabetes; 25% (0.754, 0.704 to 0.809) for ischemic heart disease; and 26% (0.736, 0.659 to 0.811) for ischemic stroke.

Lim and colleagues also reported on the global burden of disease study [33]. They included measures of disability-adjusted life years [DALYs; sum of years lived with disability [YLD] and years of life lost [YLL] attributable to the 67 risk factors and clusters of risk factors for 21 regions in 1990 and 2010]. Dietary risk factors and physical inactivity collectively accounted for 10.0% (95% UI 9.2-10.8) of global DALYs in 2010.

In summary using terminology of the olden days you could sum this article up by saying: ‘an ounce of prevention is worth a pound of cure.’ Not dissimilar to the advice my late grandparents would give for illness which may have been to drink lemonade and rest. Maybe not much evidence for this, but it seemed to work wonders, so aside from the evidence for physical activity benefits that relate to cardiovascular risk, it is good to get outside away from the technology overload that seems to engulf us, go for a walk or run and smell the roses along the way. The expression “stop and smell the roses” is not simply about flowers, but rather about how to live your life with a deeper appreciation of the world around us. It reminds us to slow down and notice the little things that make life worthwhile. Despite busy modern-day life, it is important to know how to be present in the moment; before time passes you by.

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