

Walking off insulin sensitivity

The authors of this study investigated the association between change in daily step count and both adiposity and insulin sensitivity and the extent to which the association between change in daily step count and insulin sensitivity may be mediated by adiposity. They used a population-based cohort study in Tasmania, Australia.

The participants were 592 adults (men ($N=267$), mean age 51.4 (SD 12.2) years; women ($N=325$), mean age 50.3 (12.3) years) who participated in the Tasmanian component of the national AusDiab Study in 2000 and 2005.

The main outcome measures were body mass index, waist-to-hip ratio, and HOMA insulin sensitivity at follow-up in 2005.

Over the 5-year period, the daily step count decreased for 65% ($N=382$) of participants. Having a higher daily step count in 2005 than in 2000 was independently associated with lower body mass index (0.08 (95% confidence interval 0.04 - 0.12) lower per 1 000 steps), lower waist-to-hip ratio (0.15 (0.07 - 0.23) lower), and greater insulin sensitivity (1.38 (0.14 - 2.63) HOMA units higher) in 2005. The mean increase in HOMA units fell to 0.34 (-0.79 - 1.47) after adjustment for body mass index in 2005.

They found that among community dwelling middle-aged adults, a higher daily step count at 5-year follow-up than at baseline was associated with better insulin sensitivity. This effect seems to be largely mediated through lower adiposity.

Dwyer T, et al. *BMJ* 2011;342:c7249.

Lady health workers save newborn lives in rural Pakistan

Community health workers known as 'lady health workers' have been operating in rural Pakistan since 1994, providing family planning, antenatal care, immunisations, and other services to local communities. They are ideally placed to improve pregnancy outcomes, so researchers placed lady health workers at the centre of an initiative to reduce perinatal and neonatal mortality. They received extra training in antenatal and perinatal care, clean delivery kits, and

were encouraged to visit pregnant women more often before and after delivery. Lady health workers forged relationships with traditional birth attendants, delivered group education to local women, encouraged births in health facilities, and helped to set up voluntary health committees in villages. The whole package reduced stillbirths by 21% (risk ratio 0.79, 95% CI 0.68 - 0.92) and neonatal mortality by 15% (0.85, 0.76 - 0.96) in a cluster randomised trial. This means that it is feasible and effective to deliver new and life-saving care through existing public sector health services in rural Pakistan, say the authors.

Results could have been even better. The intervention was complex and hard to implement. Poor infrastructure, resource constraints, and local politics took their toll on some elements of care, most notably the extra postnatal visits. Lady health workers managed to examine just 24% of 12 028 live births in intervention clusters.

Bhutta ZA, et al. *Lancet*. Early online publication, 15 January 2011, doi:10.1016/S0140-6736(10)62274-X.

Scorpion antivenom plus prazosin compared with prazosin alone

Envenomation by *Mesobuthus tamulus* scorpion sting can result in serious cardiovascular effects. Scorpion antivenom is a specific treatment for scorpion sting. Evidence for the benefit of scorpion antivenom and its efficacy compared with that of commonly used vasodilators, such as prazosin, is scarce. The authors assessed the efficacy of prazosin combined with scorpion antivenom, compared with prazosin alone, in individuals with autonomic storm caused by scorpion sting. They used a prospective, open-label, randomised controlled trial.

The setting was among general hospital inpatients (Bawaskar Hospital and Research Centre Mahad Dist-Raigad Maharashtra, India). The authors enrolled 70 patients with grade 2 scorpion envenomation, older than 6 months, with no cardiorespiratory or central nervous system abnormalities.

The intervention was scorpion antivenom plus prazosin ($N=35$) or prazosin alone ($N=35$) assigned by block randomisation.

Treatment was not masked. Analysis was by intention to treat.

The primary end-point was the proportion of patients achieving resolution of the clinical syndrome (sweating, salivation, cool extremities, priapism, hypertension or hypotension, tachycardia) 10 hours after administration of study drugs. Secondary end-points were time required for complete resolution of the clinical syndrome, prevention of deterioration to a higher grade, doses of prazosin required overall and within 10 hours, and adverse events. The study protocol was approved by the independent ethics committee of Mumbai.

Mean (SD) recovery times in hours for the prazosin plus scorpion antivenom group compared with the prazosin-alone group were: sweating 3 (1.1) v. 6.6 (2.6); salivation 1.9 (0.9) v. 3 (1.9); priapism 4.7 (1.5) v. 9.4 (1.5). Mean (SD) doses of prazosin in the groups were 2 (2.3) and 4 (3.5), respectively. Thirty-two patients (91.4%, 95% confidence interval 76.9 - 97.8%) in the prazosin plus antivenom group showed complete resolution of the clinical syndrome within 10 hours of administration of treatment compared with 8 patients in the prazosin group (22.9%, 11.8 - 39.3%). Patients from the antivenom plus prazosin group recovered earlier (mean 8 hours, 95% CI 6.5 - 9.5) than those in the control group (17.7 hours, 15.4 - 19.9; mean difference -9.7 hours, -6.9 to -12.4). The number of patients whose condition deteriorated to a higher grade was similar in both groups (antivenom plus prazosin - 4 of 35, prazosin alone - 5 of 35). Hypotension was reported in fewer patients in the antivenom plus prazosin group (12 of 35, 34.3%) than in the prazosin group (19 of 35, 54.3%), but the difference was not statistically significant. No difference was noted in change in blood pressure and pulse rate over time between two groups.

They concluded that recovery from scorpion sting is hastened by simultaneous administration of scorpion antivenom plus prazosin compared with prazosin alone.

Bawaskar HM, Bawaskar PH. *BMJ* 2011;342:c7136.

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