

## ECPR — AN ARRESTING FINDING

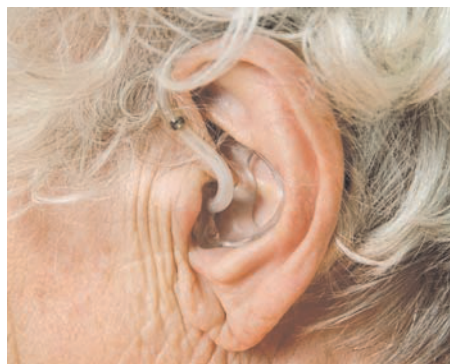
Extracorporeal life support appears to have a benefit in terms of survival over conventional cardiopulmonary resuscitation (CPR) in patients who suffer an inhospital witnessed cardiac arrest. In a 3-year prospective observational study based in Taiwan, outcomes for patients with cardiac arrest of cardiac origin who underwent CPR for longer than 10 minutes were analysed: one group received conventional CPR, and the other underwent CPR and extracorporeal life support via a circuit including a centrifugal pump and oxygenator. There was a significant difference in survival between the two groups, with those patients undergoing extracorporeal CPR having a better survival rate to discharge and a superior 1-year survival compared with those who received conventional CPR. The authors comment that although the observed difference may be in part due to selection bias, they attempted to minimise this possibility through their statistical analysis.

*Lancet 2008; 4 Jul [Epub ahead of print]*

## DIABETES AND DEAFNESS

Hearing impairment is common in people with diabetes, and diabetes appears to be an independent risk factor for hearing loss, according to the results of a large US study. Over 5000 adults underwent audiometric testing and completed a demographic and health questionnaire. A random sample also received testing for fasting plasma glucose levels to identify further cases of diabetes. In a multivariate analysis, people with diabetes had significantly increased odds of hearing impairment at all levels of severity. The prevalence of low or midfrequency hearing impairment was estimated to be 28% among adults with diabetes, compared with a reported 17% in the US population overall. Researchers suggest that several biological mechanisms may explain the association, including pathogenic changes to microvasculature and sensory nerves.

*Ann Intern Med 2008; 149: 1-10*



## NATURE AND NURTURE

An international group of medical researchers has suggested that environmental factors acting during development influence the subsequent susceptibility of an individual to disease, and should be accorded greater importance in models of disease causation. In a review paper discussing mechanisms of disease, the authors outline epidemiological and clinical factors supporting this view, including observations that smaller size at birth and in infancy is associated with an increased risk of coronary heart disease, diabetes, and osteoporosis. In a fascinating twist on the nature–nurture debate, the developmental–origins hypothesis proposes the induction of an adaptive response in the fetus or infant to signals from the mother about her health or physical state. Responses made by the fetus, including hormone production, metabolic changes, and sensitivity of target tissues to hormones, could result in changes in developing organs, resulting in permanently altered physiological and metabolic homeostatic set points. Through maternally mediated environmental modulation, the expression of genes transmitted from mother to child may be subject to alteration. The influence of this developmental plasticity, defined as “the ability of an organism to develop in various ways, depending on the particular environment or setting”, is supported by animal and human studies showing how physical, dietary or hormonal challenges from conception to infancy can result in permanent changes to function in the offspring.

*N Engl J Med 2008; 359: 61-73*

## REDUCING THE “OUCH” FACTOR

Use of a topical vapocoolant spray containing pentafluoropropane and tetrafluoroethane appears to be useful in reducing pain and anxiety in children undergoing intravenous cannulation, say Canadian researchers. In a double-blind randomised controlled trial involving 80 hospitalised children aged 6–12 years, half received the vapocoolant spray and half a placebo prior to cannulation. Children rated their pain using a colour visual analogue scale. A modest but significant reduction in the perception of pain was noted with the vapocoolant spray, and cannulation on the first attempt was more successful using the spray than with a placebo. Side effects to the spray included rare allergic reactions and skin changes secondary to hypothermia if the spray time exceeded 10 seconds. The authors comment that the topical vapocoolant is simple to use and the results are immediate, making it ideal for the emergency situation.

*CMAJ 2008; 179: 31-36*

## A PAIN IN THE BACK

Low back pain is a common problem in primary care and affects millions of people on a daily basis, with significant economic and personal costs. Australian researchers have performed a cohort study of over 900 patients presenting with acute low back pain to primary care practitioners. Outcome measures of the study included recovery in terms of ability to return to work, and patients’ perception of function and pain resolution. After baseline assessment, follow-up occurred at 6 weeks, 3 months and 12 months. The authors found that contrary to clinical practice guidelines, disability and pain took significantly longer than expected to resolve, with only 72% of participants having completely recovered at 12 months. Factors associated with a longer time to recovery included higher pain intensity, older age, feelings of depression, and a longer duration of pain before consultation.

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