

## Cochrane issue 07

### **MUSIC THERAPY FOR ACQUIRED BRAIN INJURY:**

Music therapy provided by trained music therapists may help improve movement in stroke patients, according to a new Cochrane Systematic Review.

Acquired brain injury can result in problems with movement, language, sensation, thinking or emotion. Any of these may severely reduce a survivor's quality of life. Many innovative therapy techniques have been developed to help recover lost functions and to prevent depression.

Music therapy involves using music to aid rehabilitation. Specific treatments may include the use of rhythmic stimulation to aid movement and walking, singing to address speaking and voice quality, listening to music to reduce pain and the use of music improvisations to address emotional needs and enhance a sense of wellbeing.

Research made and conducted by the Cochrane Stroke Group, identified and included seven studies involving 184 participants in this review, all of which were carried out by a trained music therapist. The results suggest that rhythmic auditory stimulation may be beneficial for improving measures of walking, but there was insufficient information to examine the effect of music therapy on other outcomes. Further clinical trials are needed. The treatment involves selecting from range of music based interventions, using both music and therapist-patient relationship as agents of change.

The World Health Organization estimated that, in 2001, there were over 20.5 million strokes worldwide. With the population ageing, even if the stroke incidence stagnates, the number of stroke patients requiring medical and rehabilitation care will rise dramatically over the next two decades.

**Citation:** Bradt J, Magee WL, Dileo C, Wheeler BL, McGilloy E. Music therapy for acquired brain injury. *Cochrane Database of Systematic Reviews* 2010, Issue 7. Art. No.: CD006787. DOI: 10.1002/14651858.CD006787.pub2.

### **RECOMMENDATIONS FOR TREATMENT OF INHERITED LUNG DISEASE ARE UNJUSTIFIED:**

An expensive treatment recommended for a genetic disorder called Alpha 1 Antitrypsin deficiency has no proven clinical benefit, according to a systematic review by Cochrane Researchers.

Alpha-1 antitrypsin deficiency is an inherited disorder that can cause lung disease. People who smoke are more seriously affected and have a greater risk of dying from the disease. Cigarette smokers often develop chronic obstructive pulmonary disease, a major constituent of the lung pathology is pulmonary emphysema which is characterised by the loss of lung tissue and enlarged alveolar spaces. Smokers with hereditary alpha-1

antitrypsin deficiency have a particularly high risk of developing pulmonary emphysema, e.g. almost all smokers with the Z phenotype (PI\*ZZ, i.e. who are homozygotic for the deficiency), will develop emphysema in early adult life and their life expectancy is reduced

The major cause of morbidity and death in severe alpha-1 antitrypsin deficiency is COPD with pulmonary emphysema, and liver disease is the second most common complication. The emphysema is mainly located in the lower lobes of the lung, whereas smokers with normal phenotype have predominantly upper lobe disease.

The first symptoms of lung disease usually appear between the ages of 20 and 50 years, and include shortness of breath following mild activity, reduced ability to exercise, and wheezing. About 10 to 15 per cent of people with alpha-1 antitrypsin deficiency have liver damage. In rare cases, alpha-1 antitrypsin deficiency also causes a skin condition known as panniculitis, which is characterized by hardened skin with painful lumps or patches.

It affects about 1 in 1600 to 5000 people. Those with lung disease suffer from shortness of breath, reduced ability to exercise and wheezing. People who smoke are more seriously affected and have a greater risk of dying from the disease.

“We found two randomised trials (total 140 patients) comparing this treatment with placebo for two to three years. All patients were ex-smokers or had never smoked but had the genetic problem that carried a high risk of developing lung problems, said Researchers but neither trial reported on the number of lung infections, hospital admissions or death from the disease”.

Therapy with alpha-1 antitrypsin cannot be recommended, in view of the lack of evidence of clinical benefit and the high cost of treatment.

**Citation:** Gøtzsche PC, Johansen HK. Intravenous alpha-1 antitrypsin augmentation therapy for treating patients with alpha-1 antitrypsin deficiency and lung disease. *Cochrane Database of Systematic Reviews* 2010, Issue 7. Art. No.: CD007851. DOI: 10.1002/14651858.CD007851.pub2.

## **INTERVENTIONS FOR PREOPERATIVE SMOKING CESSATION: CAN PEOPLE BE HELPED TO STOP SMOKING BEFORE THEY HAVE SURGERY?**

Smoking is a well-known risk factor for complications after surgery. Studies of interventions to encourage smokers to stop smoking before their operation show that short- and long-term quitting can be achieved.

Complications related to anaesthesia and surgery is important to patients and expensive for the healthcare system. Postoperative complications result in increased morbidity and mortality, and extended hospital stay and convalescence.

Five to ten percent of a population may annually undergo surgery and anaesthesia.

Pulmonary or cardiovascular complications occur in up to 10% of the cases, with people who smoke having a considerably increased risk of intra- and post-operative complications. In a retrospective study, smokers were found to have a three- to six-fold increased risk of intra-operative pulmonary complications. Smokers with chronic heart or lung disease have a two- to five-fold increased risk of preoperative complications.

Smoking has many effects on heart function and circulation, both in the short and long term. Short-term effects may be due to increased amounts of carbon monoxide and nicotine in the blood. The harmful effects of these substances disappear 24 to 48 hours after smoking cessation. The long-term effects include the development of generalized atherosclerotic changes in the vasculature. Short-term effects are more significant in those who suffer from generalized atherosclerosis

In a retrospective study in patients undergoing pulmonary surgery, it is found that the risk of postoperative pulmonary complications was significantly higher compared to never-smokers for both current smokers and for recent smokers who had been smoke-free for two to four weeks before their operation, furthermore it is found, in a prospective, descriptive and uncontrolled study, that patients who stopped smoking about eight weeks prior to operation reduced their risk of postoperative pulmonary complications. The optimal timing of smoking cessation before surgery to reduce postoperative pulmonary complications remains poorly defined.

Researchers are advising smokers to stop smoking four to eight weeks before going to surgery, to reduce the chances of suffering long healing wounds.

**Citation:** Thomsen T, Villebro N, Møller AM. Interventions for preoperative smoking cessation. *Cochrane Database of Systematic Reviews* 2010, Issue 7. Art. No.: CD002294. DOI: 10.1002/14651858.CD002294.pub3.

## **HORMONAL CONTRACEPTIVES FOR CONTRACEPTION IN OVERWEIGHT OR OBESE WOMEN**

Excess body weight has become a problem around the world. Being overweight or obese may affect how well hormonal birth control works to prevent pregnancy. Hormonal birth control includes birth control pills, the skin patch, the vaginal ring, implants, and injectables.

The Cochrane Fertility group researchers have looked at studies of hormonal birth control for women who were overweight or obese compared to women of normal weight or body mass index (BMI). The formula for BMI is  $\text{weight (kg)} / \text{height (m)}^2$ .

Anja Helmerhot of the (CFG) says that they did computer searches for hormonal birth control among women who were overweight or obese. “We also wrote to researchers to find other studies we might have missed in our search. All types of studies were considered,” said, Helmerhot.

According to the Cochrane fertility groups researchers they found seven reports with data

from 11 trials and 39,531 women, one of three studies using BMI found more pregnancies among overweight or obese women. That trial looked at two birth control pills, researchers are worried that overweight and obese women may have a higher risk for failure of hormonal contraceptives.

Some studies have suggested an association between higher body weight or BMI and unintended pregnancies while using oral contraceptives or implants. However, survey research has suggested little association, especially after adjusting for demographics or socioeconomic factors. The risk of oral contraceptive failure among overweight or obese women may depend on whether the assessment is based on perfect use or typical use.

Metabolic changes in obesity and greater body mass may lead to reduced effectiveness of oral contraceptives and other hormonal methods. However, we know little about how overweight women metabolize hormonal contraceptives, since many studies exclude overweight women. Results were mixed in terms of whether body weight or mass was associated with unintended pregnancy. Of seven studies, four showed a higher risk for pregnancy among the heaviest women.

**Citation:** Lopez LM, Grimes DA, Chen-Mok M, Westhoff C, Edelman A, Helmerhorst FM. Hormonal contraceptives for contraception in overweight or obese women. *Cochrane Database of Systematic Reviews* 2010, Issue 7. Art. No.: CD008452. DOI: 10.1002/14651858.CD008452.pub2.