

## Tilburg University

### ECT and anaesthesia

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ECT and anaesthesia

The ECT Commission Report(1983) states that ECT must be limited to some hospitals and only used in major depressive patients with melancholia(DSM III). Anaesthesiologists were soon involved in preventing the more obvious undesirable features of ECT, such as awareness and avulsion fractures. Subsequent appreciation of the metabolic disturbances also provoked, e.g. hypoxia, hypercapnia and acidosis, led to further appropriate measures being taken. The technique which we now use consists of allowing the patient to breathe oxygen from a facepiece for several minutes followed by the intravenous injection of the hypnotic, etomidate, and the application of a tourniquet to one arm. The short-acting muscle relaxant, suxamethonium, is then injected into a vein in the other arm and the patient hyperventilated with 100% O<sub>2</sub> for a further few minutes. The shock is then induced and the muscle contractions in the unparalysed arm assessed. The capnogram, recorded from a patient on a ventilator with a trigger mechanism during an epileptic fit, shows the enormous rise in expired CO<sub>2</sub> which occurs as the result of increased carbon dioxide production in muscles which are allowed to contract during a convulsion. If pre-oxygenation, followed by hyperventilation, are not both carried out, serial blood gas estimations on blood obtained from the carotid artery and the internal jugular vein show the development of a marked degree of hypoxia, hypercapnia, and respiratory and metabolic acidosis. With our present technique this is avoided.

References: Advies inzake ECT, uitgebracht door Cie van de Gezondheidsraad, No.1983/13  
Den Haag, 1983.  
DSM III: Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Washington DC, APA, 1980.