



Title	Health Technology Assessment: Polysomnography and Home Monitoring of Infants in Prevention of Sudden Infant Death Syndrome
Agency	KCE, Belgian Health Care Knowledge Centre Wetstraat 62, BE-1040 Brussels, Belgium; Tel: +32 2 287 3388, Fax: +32 2 287 3385; hta@kenniscentrum.fgov.be, www.kenniscentrum.fgov.be
Reference	2006. KCE reports 46 (vol 46A with Dutch executive and vol 46B with French executive) (D/2006/10273/59). http://kce.fgov.be/index_fr.aspx?SGREF=3228&CREF=8540

Aim

To assess the value of overnight polysomnographies (PSG) and home monitoring in infants (<1 year of age), particularly in preventing sudden infant death syndrome (SIDS); and to study the utilization of polysomnographies and home monitoring for infants in Belgium and their cost to the social security program.

Conclusions and results

Literature Review: Validated reference values are lacking for polysomnographies and home monitoring in infants. We did not find sufficient evidence-based findings to determine the interaction between cardiorespiratory (CR) events, psychomotor development, and the role of PSG and home monitors. We did not find data to confirm (or dismiss) the usefulness of PSG in clarifying the underlying diagnosis in children who experienced an apparent life-threatening event (ALTE). The usefulness of PSG in infants with other medical conditions (eg, neuromuscular conditions) is generally accepted despite little evidence. The literature, based on large-scale observational cohort studies, clearly shows that the PSG cannot predict SIDS. Large-scale observational cohort studies did not show a decline in SIDS incidence after introducing home monitoring. There are few evaluations of the cost effectiveness of PSG and home monitoring in preventing a sudden unexplained infant death. The literature is of low quality.

Data Analysis: Despite the decrease in PSGs in recent years, polysomnographic examinations in infants are still widely performed in Belgium. Medical practices vary widely. Most PSG stays relate to an indication that is vague, raising suspicions that mainly healthy infants are being tested. A disproportionate use of PSG testing will probably result in a higher utilization of monitoring devices. Belgian healthcare professionals do not seem to propagate PSG as a screening tool, but parents are not always contradicted in their belief that PSG is a sound safety measure. Our research points to inappropriate use of PSG in Belgium at a considerable cost to social security.

Recommendations

To improve the appropriateness of polysomnographies performed in infants in Belgium:

- Offer better information to the public, particularly to young parents, through authorized bodies
- Reinforce the role of healthcare workers and daytime baby minders
- Reform current regulations by limiting the number of hospitals that perform PSGs in infants and require systematic referral to a pediatrician specialized in PSG assessment.

Methods

Literature Review: Critical appraisal of the clinical and economic scientific literature.

Data Analysis: Analysis of relevant observational data (hospital stays, billing codes, health insurer data) and exploratory qualitative study among health professionals and the parents of infants undergoing PSG.

Further research/reviews required

The scientific literature lacks studies of good quality, particularly concerning the effect that CR events in infants have on further psychomotor development.