

PARDON MY INTRUSION

by Steven Grenard RRT, RPSGT

A recent study conducted by a University of Kentucky team led by Dr. Kevin Nelson suggests that REM intrusion (REM while awake) may be the cause of many of the near death experiences, 1000's of which are reported by people who undergo and survive cardiac arrests, auto accidents and other life threatening events. As polysomnographers can attest, it is not unusual to see classic phasic REMs while the EEG is producing alpha waves. Alpha, by definition and demonstration, occurs while awake with eyes closed. NDEs have perplexed and mystified the public and scientists alike ever since a Texas physician, Ray Moody, introduced the term in his 1975 book *Life after Life*. Moody compiled anecdotal survivor accounts and points out that people who have undergone this sort of traumatic experience also developed a strong transformation of personal beliefs.



Researchers say that the primary feature of near death experiences (NDE) forms the basis for a neurologic origin: immobilization (isolated sleep paralysis) bright light, fully alert to their surroundings and seemingly "aware of being dead." The typical NDEr emerges from a life threatening situation such as a cardiac arrest believing that they had died, floated above their bodies, saw things going on around them and a bright light, around them or at the end of a tunnel, which is ostensibly an objective to go toward but then are turned away and returned to life as if it is not yet their time. The phenomenon occurs in about 10% of successfully resuscitated cardiac arrest patients, but it is impossible to know for sure if it isn't much higher as many victims might choose not to share their experiences. In 1983, Dr. Bruce Greyson published a rating scale that enumerates 16 features of an NDE: altered sense of time, accelerated thought processes, undergoing life review, sense of sudden understanding, feelings of peace, joy, cosmic unity as well as a feeling of being bathed in a bright light. Paranormal features include vivid senses, ability to have extrasensory perception, purported ability to be precognitive and the sensation of being out of one's body, an experience also known as an OBE. NDErs report being in another worldly environment, being in the presence of a mystical being, and seeing deceased relatives, friends and religious figures. There is also a sensation of being at a border with a point of no return should they "cross over." Not all NDErs have all of these experiences, but each case is scored for NDE attributes with a maximum possible score of 32 and minimum score of 7 required to be classified as an NDE.

Greyson, who is Chester F. Carlson Professor of Psychiatry at the University of Virginia Health Care System says that "What this study showed was that people who report NDEs also report hearing or seeing things as they fall asleep or as they wake up, or felt paralyzed upon waking, or felt sudden muscle weakness, more often than do non-NDErs. These reports are interpreted as evidence of REM states intruding into wakefulness (which they MAY be, depending on how the participants interpreted "hearing" and "seeing" things). The authors of the study did NOT conclude (as some of the press reports imply) that REM intrusion into wakefulness causes NDEs (indeed, 40% of their NDErs sample denied any "symptoms" of REM intrusion). They concluded only that REM intrusion may contribute to the phenomenology of NDEs. Well, they

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that pneumatic tube transport does not cause significant changes in pH or PCO₂.

Recommendations

1. For everyday blood gas analysis a plastic syringe kept at room temperature and analyzed within 30 minutes is recommended. Documents from the CLSI (NCCLS) C-46 and H11-A4 recommend that blood gases be collected in plastic syringes and analyzed at room temperature within 30 minutes.
2. If samples cannot be analyzed within 30 minutes then glass syringes placed on ice should be used.
3. If a patient has an increased leukocyte or thrombocyte count then glass syringes placed on ice and analyzed within 10 minutes is recommended.
4. For blood gas analysis where the results will be used to calculate the patient's shunt fraction glass syringes placed on ice and analyzed within 10 minutes is recommended.
5. If your facility uses a pneumatic tube system to transport blood gas samples then great care should be exercised to remove all air bubbles and foam before the sample is sent. Plastic syringe at room temperature and analyzed within 30 minutes is recommended.

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might... but since this was a retrospective study, it is also plausible that having an NDE makes it more likely subsequently, that REM states will intrude into waking consciousness." Mark Mahowald, Director of the Minnesota Regional Sleep Disorders Center thinks this is a great study, adding, "The bottom line is that, unlike what most people think, sleep is not all or nothing. You can have bits and pieces of sleep intruding into bits and pieces of wakefulness, and that's where things get very interesting." What's fascinating is that someday the mechanisms for NDE experience or NDE-like experiences may be determined with physical testing (polysomnography) correlated with accounts of what the test subject perceives during the periods of REM intrusion.



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Nelson concedes that he doesn't believe REM intrusion will turn out to be the whole explanation for the near death experience. The most important aspect of this investigation is that it provides a testable hypothesis for clinical findings rather than paranormal rationales. The hypothesis predicts that NDE occurs under circumstances of peril and is most likely to happen in those with a prior history of REM intrusion. Since the brain's limbic system is activated during REM sleep, it would not be surprising for it also be activated during REM state intrusion, thus turning what would otherwise be dreams into waking hallucinations that take on paranormal, transcendental and emotional aspects.

The work is spiritually neutral according to Nelson and provides a reason for how the brain contributes to the formation of NDE but not why.