

Autism Research Review

I N T E R N A T I O N A L

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Reviewing biomedical and educational research in the field of autism and related disorders

Melatonin: researchers say hormone markedly improves sleep, behavior of developmentally disabled children

A team of British and Canadian researchers is organizing an international study into the use of melatonin to treat sleep problems in developmentally disabled children, after a pilot study showed significant, often remarkable results.

James Jan et al. say they began their study for compassionate reasons, because many of the families of the children they worked with were suffering from severe exhaustion due to sleep deprivation. They note that sleep disturbances can be a major reason for foster care placement.

The researchers conducted a double-blind, placebo-controlled study of 15 children with varying disabilities including autism. Only subjects with severe sleep problems were included. All of the children improved while taking melatonin, while several showed dramatic changes. The subjects included:

—A formerly "cranky and hostile" 14-year-old with Down syndrome, whose sleep patterns became normal within 48 hours of starting treatment. "[His] temper tantrums and bed-wetting disappeared, his attention span improved, and he became inquisitive and friendly," the researchers say. "These behavioral changes were strikingly rapid, occurring within a few days of treatment."

—A six-year-old boy with autistic-like behaviors, who slept only 2-1/2 to 3 hours a night. When melatonin treatment was started, the boy slept well and his parents reported that he was easier to care for.

—A three-year-old with Down syndrome and infantile spasms which were treated, with only partial success, using anticonvulsants. The girl, who previously cried for hours at bedtime, began falling asleep in 30 to 45 minutes when melatonin treatment began. "After a week," Jan et al. say, "she began to wake up in the mornings smiling rather than irritable. Her myoclonic seizures unexpectedly decreased from 40 to between two and seven per day, without a change in her anticonvulsants....and her development began to improve." They add that "[her] chronically exhausted mother was transformed into a happy individual."

No adverse effects were seen in any of the study subjects, and the researchers were impressed at the range of positive effects (although only minimal improvements were seen in a few subjects). "Improved mood

and disposition have been the rule," they say. "Irritability has greatly decreased and

In addition to sleeping better, many of the children became less irritable, and more alert and sociable. Three had fewer seizures.

age-inappropriate temper tantrums have disappeared. The children have tended to become more alert and more sociable, and developmental gains have often been noted."

Of even greater potential importance is the finding that "three subjects with epilepsy almost immediately showed an improvement in their seizure control."

Melatonin dosages used in the study ranged from 2 to 10 mg, but most caregivers found 5 mg to be the optimum dosage. Efforts to phase out the medication once normal sleep patterns were established succeeded in some children, but in 10 subjects the sleep problems returned within two to three days. The hormone's effectiveness did decrease over time in one subject, but several other subjects have taken melatonin for a year or more with no return of sleep problems.

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New report confirms vitamin E's effectiveness against drug disorder

Powerful neuroleptic drugs can sometimes control aggression and self-injury, but at a price: a high rate of serious, sometimes irreversible side effects. One of the most common of these adverse effects is tardive dyskinesia (TD), a condition characterized by involuntary motor movements such as chewing and tongue darting.

A growing body of evidence indicates that vitamin E can prevent symptoms of tardive dyskinesia, or alleviate symptoms after the disorder develops. According to a new report by Louise Dabiri et al., vitamin E treatment can be effective even for individuals who have suffered from TD for years.

In a double-blind study of patients with tardive dyskinesia, the researchers administered vitamin E to six subjects and a placebo to five others. "Twelve weeks of treatment with vitamin E produced a 36% improvement in [all] six subjects with mild tardive dyskinesia," they report, noting that "four of the patients receiving vitamin E in our study had had tardive dyskinesia for at least five years and yet showed improvement." The dosage of vitamin E used in the study was increased gradually to 1200 IU.

The researchers' report follows four others finding vitamin E effective in treating or preventing TD. One other study showed no improvements in seven of 21 subjects,

but Dabiri et al. note that this was a short-term (two-week) study.

Previous positive studies (see ARRI 5/1 and 6/2) include:

- A 1992 report by Lenard Adler, who found that symptoms of TD decreased significantly in nine of 16 patients treated with large daily doses of vitamin E. Only one patient in a matched placebo group showed improvement.
- A 1991 study by A.M. Elkashef et al., who found that five of eight patients treated with vitamin E showed marked improvement.
- A 1989 study by Jean Lud Cadet and James Lohi which found that almost half of 15 TD sufferers treated with vitamin E improved.
- A 1989 report by David Hawkins, who found that only .05% of 61,000 patients given neuroleptic drugs developed TD if also given high dosages of vitamins B3, B6, C, and E.

"Effectiveness of vitamin E for treatment of long-term tardive dyskinesia," Louise M. Dabiri, David Pasta, John Darby, and Diane Mosbacher, *American Journal of Psychiatry*, 151:6, June 1994, pp. 925-926. Address: Louise Dabiri, Department of Psychiatry, 5SP470, Oklahoma University Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190-3048.