

state as the system is going through a quantum jump, the more likely the system will show up in its initial state. Thus, observing the system's state should interfere with the transition that ought to take place between level 1 and level 2.

That's exactly what Itano and his colleagues found. They detected scattered light, indicating the ions tended to end up in state 1 despite the influence of the radio waves.

Such effects may play subtle but important roles in quantum measurements. "A lot of quantum mechanics and a lot of the things we observe in nature are under conditions where frequent measurements are being made," says physicist Richard J. Cook of the Frank J. Seiler Research Laboratory in Colorado Springs. For instance, looking at a particle means observing the photons of light scattered from the particle. "Every time a photon is scattered off and enters your eye, that's a measurement of the position of the particle," he says.

One intriguing possibility is that making appropriate measurements or observations quickly enough could slow or even stop the spontaneous decay of an unstable particle such as a radioactive isotope. But no one is certain whether such a scheme would ever be practical.

— I. Peterson

Panic attacks increase suicide attempts

Some psychiatric conditions, such as severe depression and schizophrenia, are known to increase a person's risk of suicide. But panic attacks and panic disorder, defined as frequently recurring panic attacks, are also linked to a strong and largely unappreciated risk of contemplating and attempting suicide, according to a new study.

Surprisingly, people with panic disorder have a higher rate of suicide attempts than do severely depressed individuals, report psychologist Myrna M. Weissman of Columbia University in New York City and her colleagues in the Nov. 2 *NEW ENGLAND JOURNAL OF MEDICINE*.

This finding is "quite remarkable" and marks panic disorder as a major new risk factor for suicide, writes psychiatrist Peter Reich of the Massachusetts Institute of Technology in Cambridge in an editorial in the same journal. Reich also notes that general practice physicians, who most commonly encounter panic disorder patients, can help prevent suicides by recognizing and treating symptoms of the disorder.

Panic disorder afflicts an estimated 1.5 percent of the U.S. population at some time in their lives. It involves repeated

episodes of sudden, unpredictable, intense fear accompanied by symptoms such as heart palpitations, chest pain, faintness and the sense that one is about to die or go crazy. Less frequent panic attacks affect 3 to 4 percent of the population.

Weissman and her co-workers studied a random national sample of 18,011 adults taking part in a larger epidemiologic study of psychiatric disorders. Trained interviewers questioned each subject at home about psychiatric symptoms.

The 254 subjects with panic disorder and the 667 with panic attacks reported thinking about death, feeling as though they wanted to die, having thoughts of committing suicide or attempting suicide significantly more than did subjects with any other psychiatric disorder or with no disorder. One in five people with panic disorder had attempted suicide, compared with about one in eight with panic attacks, one in 16 with another psychiatric disorder and one in 100 with no disorder.

When the researchers statistically controlled for panic subjects who had another psychiatric disorder, such as severe depression or alcohol abuse, they still found substantially more suicidal thoughts and suicide attempts among the panic group. Nevertheless, the risk of suicide attempts proved greatest for panic disorder subjects who also abused alcohol or illicit drugs. People with less frequent panic attacks were more likely to report suicide attempts if they also were alcohol abusers or severely depressed.

The researchers have no data on the rate of completed suicides among panic subjects. However, Reich notes that about one in three people who kill themselves have made previous attempts. Furthermore, a recent study in which researchers followed hospitalized psychiatric patients with a primary diagnosis of panic disorder for 30 to 50 years revealed a significantly higher mortality rate — primarily due to suicide or heart disease — among these individuals than in a group of patients hospitalized for severe depression.

Subjects in the national sample with panic disorder were more likely than those with other psychiatric disorders to seek help for their emotional problems from general physicians or psychiatrists. Panic subjects were also more likely to use a hospital emergency ward, Weissman and her colleagues note. Because panic symptoms are often similar to those of medical illness, accurate diagnosis is imperative, the researchers assert. Drug and behavioral treatments often ease panic symptoms, they say, although there is no direct evidence that these efforts reduce suicide attempts.

— B. Bower

Marrow rebuilt with umbilical-cord blood

Testing an alternative to bone marrow transplants, researchers have reconstituted the marrow of a seriously ill boy using blood drawn painlessly from the umbilical cord of his newborn sister.

A newborn's blood contains stem cells, the parent cells of marrow and blood cells, says Arleen D. Auerbach of Rockefeller University in New York City, who describes the procedure with French and U.S. colleagues in the Oct. 26 *NEW ENGLAND JOURNAL OF MEDICINE*. Children and adults have stem cells only in the bone marrow.

Physicians could use a sibling's cord blood as a source of stem cells to treat leukemia, aplastic anemia or any other disease normally treated by marrow transplants, Auerbach says. However, the newborn's tissue must match the recipient's. Auerbach proposes setting up banks to store cord blood for patients with no compatible sibling donor.

The 5-year-old boy suffered from Fanconi's anemia, an inherited aplastic anemia that depleted his marrow. After his sister's birth, the researchers froze blood drawn from the cut umbilical cord still attached to the mother. They stored the blood for seven months, until the baby was old enough to provide marrow if the blood transplant failed.

Doctors then used drugs and radiation to destroy the remainder of the

boy's marrow — a standard step in marrow transplants — and infused the thawed cord blood. Healthy stem cells replenished the marrow and changed his B+ blood type to his sister's O+. The boy now "leads a normal life," the researchers report.

A year after his September 1988 transplant, the team successfully performed the procedure on another pair of siblings, Auerbach told *SCIENCE NEWS*.

The new approach offers several advantages over marrow transplants, Auerbach says. Using cord blood allows the sick child to receive a transplant soon after the birth of a compatible sibling, whereas candidates for marrow transplants must wait until the donor is at least 6 months old. In addition, the cord blood donor avoids painful marrow extraction. The researchers say they do not know whether cord blood contains enough stem cells to treat an adult or large child. They also note a slight risk of the mother's immune cells mixing with the cord blood and attacking the transplant recipient.

David G. Nathan of Children's Hospital in Boston does not envision broad use of the procedure. "How many children are there," he asks, "who need a transplant and have a histocompatible sibling about to be delivered?"

— A. McKenzie