

Biology

John Travis reports from Orlando, Fla., at the Biology of Marine Mammals meeting

Whales dive deep for next breath

Anthony R. Martin was puzzled recently as he examined data retrieved by satellite from tagged beluga whales. The information clearly showed that in some of the frigid waters near the Arctic Ocean, male beluga whales often plunge almost 1,000 meters before returning to the surface.

"Why do they dive to these ridiculous depths?" wondered Martin, a scientist at the Natural Environment Research Council's Sea Mammal Research Unit in Cambridge, England.

Martin had never before observed such dives. The whales usually dwell in shallower waters, he says. There, they dive to the ocean floor, eating until their need for oxygen forces them to surface. The new observations, however, showed the belugas performing V-shaped dives, never idling in the deep water.

Martin speculates that this unusual diving behavior helps the whales find their next breathing hole in ice-covered waters. "It all makes sense. There's no proof, of course, but it's a darn nice theory," says Martin.

To the surprise of the scientists, many of the male belugas migrate north from the Beaufort Sea through Arctic waters toward Melville Island, explains Martin. In contrast, their female counterparts head to the Amusden Gulf between the Canadian mainland and Victoria Island. While the females encounter largely open water, the males must travel under ice that has accumulated over many years.

Since the males make the V-shaped dives only under the ice pack, says Martin, the strategy may help the whales survive the arduous journey. The dives, he suggests, give a whale its best chance of finding the infrequent breathing holes in the dense ice pack.

Martin compares the dives to the actions of a pilot with severe plane trouble. In order to find an emergency landing site, the pilot climbs as high as possible to enlarge his or her field of view.

Martin speculates that a beluga swims downward until it has used up half its oxygen. At that point, he says, the whale decides whether to return to its previous breathing hole or to strike out toward a newly identified one. From those great depths, whales probably cannot see open water at the surface, but Martin remarks that their amazing hearing may detect lapping water, which signifies a hole in the ice.

Sea animals stranded by El Niños

Seals, sea lions, and other marine mammals often strand themselves along the California coast. For years, the National Marine Fisheries Service has collected records of strandings, documenting whether the animals die or are returned to the water. Wendy S. Dunlap-Harding, a University of San Diego student working at the nearby Sea World, has now looked at the stranding data from 1982 to 1992. "Nobody had ever done anything with it," she says.

Dunlap-Harding found that the unusual weather pattern called El Niño seems to influence the number of stranded California sea lions and northern elephant seals. An El Niño period, which is characterized by increased storm activity, starts with an influx of warm water into the eastern Pacific.

Dunlap-Harding discovered that during 1983 and 1992, the only years of El Niño activity in her data, strandings increased dramatically. "The numbers are huge," she says. In 1983, for example, around 1,750 sea lions stranded themselves. In most years, fewer than 750 do.

Though no one completely understands why animals strand themselves, Dunlap-Harding speculates that El Niño worsens the problem by decreasing the availability of food for the marine mammals. The warm water influx displaces nutrient-loaded cooler waters and ultimately reduces the fish populations that the animals prey on, she suggests.

Biomedicine

Drug-induced Parkinson's, part 2

This summer, researchers from Harvard Medical School, Harvard School of Public Health, and Brigham and Women's Hospital, all in Boston, warned that the tranquilizers some elderly people take to control dementia, anxiety, and other problems can produce misleading side effects. Tremors and a slow, stiff gait, for example, have deceived physicians into treating the patients for Parkinson's disease (SN: 7/5/95, p. 86). "There's a real tendency to misinterpret disease in the elderly," says Jerry Avorn of Brigham and Women's Hospital.

Avorn and his colleagues are now raising the same alarm about the drug metoclopramide, which many elderly people take to treat nausea and digestive tract problems. The drug's ability to create symptoms mimicking Parkinson's is well documented, he says, but no one had examined whether metoclopramide generated misdiagnoses among the elderly.

In their new study, reported in the Dec. 13, 1995 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the researchers looked at the medical records of almost 20,000 people age 65 or older to see if they had ever taken metoclopramide. Around 3,500 had recently begun treatments with an anti-Parkinson's drug. The other people had never taken drugs for Parkinson's.

The investigators found that the percentage of elderly people taking metoclopramide was much higher in the group being treated for Parkinson's than in the control group, suggesting that physicians frequently misdiagnose older patients. Avorn and his colleagues concluded from the data that an elderly person taking metoclopramide was three times more likely to be prescribed an additional drug to treat Parkinson's disease than was a person who did not take the digestive drug.

In a statement released by the National Institute on Aging in Bethesda, Md., Stanley L. Slater, deputy associate director of the institute's geriatric program, commented, "The study results are disturbing because metoclopramide is a widely prescribed drug. Its use may have resulted in people being needlessly treated with costly and possibly toxic antiparkinsonian medications for a disease they don't have."

Light workouts make for a good heart

Couch potatoes don't have to start training for marathons or lifting weights for hours every day to protect their hearts from cardiovascular disease. Thirty minutes a day of moderately vigorous exercise, such as swimming, bicycling, brisk walking, or even yard work, is enough to offer significant health benefits to most adults and children, a panel of scientists convened by the National Institutes of Health concluded last week.

The panel, chaired by Russell V. Luepker of the University of Minnesota School of Public Health in Minneapolis, announced its findings at the end of NIH's Consensus Development Conference on Physical Activity and Cardiovascular Disease. In the United States alone, researchers estimate, heart attacks and strokes that stem from cardiovascular disease kill around a million people a year.

Despite this threat, the panel noted that in a recent study, a majority of American adults reported that they engaged in "little or no regular leisure physical activity." The panel also warned that obesity and inactivity are becoming more prevalent among the young and that more effort should be made to encourage children to exercise regularly.

The panel concluded that many people who live a normally sedentary lifestyle mistakenly believe that they must pursue rigorous, difficult exercise regimes to obtain any health benefits. "More than half of adult Americans do not get enough physical activity, and these are the very people who can gain the most by just getting started," says Luepker.