

*Ask:
Selena*

The magic of

DOLPHINS

They're playful, intelligent – and many believe they have healing powers.

Now scientists are close to unravelling the mystery of how dolphins can cure human ills

By Jane Phillips

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hen Jemima Nielsen first went swimming with dolphins at the age of 20, she was suicidal. She'd been depressed since childhood, but then her godmother drowned and Jemima, at 16, became seriously anorexic. "My godmother and I had been incredibly close," Jemima explains. "I was so upset that my boyfriend found it really hard to cope with my grief, so we split up."

Jemima's life fell apart. "I was looking for anything to be addicted to," she says, "so I started dieting to excess." Four years later, she weighed less than six stone, and was locked in a bleak, obsessive routine of calorie-counting, bingeing and throwing up.

Her family were desperate, and nothing seemed to help. But then Jemima's mother saw dolphin researcher Horace Dobbs on television, talking about the miraculous effect swimming with dolphins can have on depression. She contacted Horace, and a few months later Jemima was frolicking with Fungie, a wild dolphin who lives off Ireland's Dingle Bay. The experience has transformed her life.

"As soon as I was in the water, he approached me," says Jemima. "I felt him nudging my leg. He came up just below me, a foot from my face, then turned on one side, and looked straight at me with one eye. I felt an immense calm. I was at peace. Everything was in that look - there was no searching, no need to question, just me and him in a world of our own, one to one. I tried to touch him, but he dodged away playfully. He circled me, teased me. Everything was led by him - he was so gentle, as if he was weighing up what I needed. That first time in the water with him felt like forever, but also no time at all - I suppose it was about five minutes.

"A real sense of love came from him. I felt incredibly privileged," Jemima continues.

"I started crooning to him as I would to a baby - completely soppy and overwhelmed, and laughing and crying. All the emotions I had bottled up just poured out. He was this

wonderful free spirit; I couldn't manipulate him, I just had to be in the moment.

"The final day was the most magical. Fungie raced up to me at full speed, and at the last minute, when my heart was pounding, he veered off. Then he jumped up within inches of one side of my head and leaped down the other side. It was awe-inspiring - but also great fun. When I had to leave, Fungie did a huge goodbye leap across the bows of the boat. I was speechless. At that point I wanted to stay with him forever."

Jemima's recovery began from that moment. Although her anorexia wasn't cured instantly, she came off antidepressants, felt less isolated and more sociable, passed her university finals, and started studying for a PhD. "For the very first time I began to feel a sense of future," she says.

Now 33, Jemima is happily married with two young daughters. "I've come such a long way," she says. "The problem with depression is total inertia and a lack of confidence. The dolphin experience empowered me, and made me feel more acceptable. It was a turning point in my life."

Jemima's response is not unique. Thousands of people tell astonishing stories about the therapeutic effect of swimming with dolphins. These beautiful beasts seem to nourish the soul and renew people's appreciation of life.

How they do this seems to be - as yet - beyond rational scientific explanation. What we know is that they emit multi-frequency sound waves that resonate in the body, producing a blissful, euphoric sensation that can release overpowering emotions.

"After swimming with Fungie, I felt an uplifting, exhilarating, profoundly peaceful sense of wellbeing," says Dr Kim Jobst, a senior registrar at Glasgow's Homeopathic Hospital. "It was akin to a state of grace. I've been trying to make sense of it ever since."

So have scientists worldwide. Splashing around with a wild but gentle 600lb mammal is bound to be a thrill, and is thought to stimulate the release of endorphins - the body's natural feelgood chemicals. So dolphins, Dobbs suggests, are instant "stressbusters". But scientists say the chemical effects of endorphins usually wear off after a few hours, while the changes people report after dolphin encounters - not just a sense of wellbeing, but also improved learning and cognitive abilities, concentration, communication and social skills - seem to last for weeks, even months.

Dolphins can also have a powerfully beneficial effect on seriously ill children. Since the 1970s, dolphin therapists such as Dr David Nathanson and Dr Betsy Smith in Florida have recorded

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dramatic breakthroughs with autistic, brain-damaged and paralysed children. Dolphins somehow help the body's natural healing instincts to kick in. Even more remarkably, they seem to know who's sick, and want to help.

Dr Jobst says he was amazed to see Fungie make a beeline for a woman with cancer. "He made his own decision to go to the one seriously ill person in our group," he says. "I think humans relate at a very deep level with other life forms, and our nervous system is built to do that."

Research at Mexico City's Aragon Aquarium seems to bear this out. There, dolphins are trained to aim their sonar on to specific areas of brain-damaged children's heads. Except sometimes, says medical director Vichis Quiroz, they refuse and start working on a different place instead. Further investigation has proved the initial human diagnosis to be wrong: the dolphins had correctly targeted the damaged part of the brain. Which suggests their instinctive diagnosis is more sophisticated than a brain scan.

But do dolphins really have intuitive healing powers, or is there a more scientific explanation?

Dr Russell Bourne of Florida's Upledger Institute, an alternative health centre, believes there is. Dolphins have evolved a highly sophisticated, multi-frequency sonar system that allows them to "see" with sound, he explains. These scans reveal human problems such as internal blockages and tumours.

"Dolphins create a sonographic image in their own heads, and then do something with what they see. It might sound far-fetched, but I believe it's true," says Dr Bourne.

"Dolphins produce an ultrasonic frequency four times higher than that used therapeutically in clinics," he continues. "It's clear that dolphin sonar can alter human tissue."

In 1996, the Upledger Institute carried out a scientific study of dolphin-assisted therapy on 21 seriously ill patients. The results were significant: 19 patients improved, some dramatically. One child with muscular dystrophy developed such strength in his legs that he was able to pedal a boat around. Others reported reductions in pain, greater strength and flexibility, improved appetite and more restful sleep.

The human body is 80 per cent water, and sound travels 60 times more efficiently through water than on land. Because of this, Dr Bourne believes, sonar may affect us in profound ways that we aren't even aware of. "Dolphins may send

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messages that the conscious mind doesn't respond to, but the body does," says Dr Bourne. "When we take medicine it goes to every cell, even though we're not aware of it. Dolphins may affect our cells in the same way, perhaps by releasing chemicals or neurotransmitters."

Dr David Cole of the AquaThought Foundation, which researches human-dolphin interaction, takes this theory a step further. He took ECG readings of patients' brains before and after dolphin swims. He discovered that the analytical left side and the creative right side of the human brain synchronise after a swim, and the brain shifts from high-frequency beta (a state of mind associated with action and alertness), through alpha (a calm,

passive state) into low-frequency theta (a state linked to creativity and vivid memories). Children below the age of six spend a lot of time in the theta state. Adults reach it just before drifting off to sleep or when meditating. If your brain can't produce enough theta waves, you tend to suffer from stress.

In 1989, US psychotherapist Dr Eugene Peniston trained people to access the alpha and theta states. After a year, the theta group showed profound personality changes. Not only were they less depressed and anxious, but they felt more sociable, conscientious, stable and imaginative. Some were even able to overcome addiction. "Alpha-theta brainwave training promises an effective new treatment for

alcohol abuse, depression and eating disorders," believes Dr Peniston.

Dr Cole believes these changes are caused by "cavitation", in which ultrasonic waves create areas of compression and expansion that form small bubbles in the boundaries between cells. These bubbles carry hormones and other permeants that may, Dr Cole speculates, even disrupt some cancer-causing agents.

As yet this is only a theory, but it may go a long way to explaining why dolphin healing works. If a high-frequency sonar blast can stimulate change in the human body at cellular level - well, who needs doctors?

But why would dolphins take the trouble to heal humans? Horace Dobbs believes that dolphins have access to the *qi* force, the vital energy that is the basis of Chinese medicine. Dr Bourne takes a more prosaic view. "Some people think dolphins are super-intelligent beings with mystical powers," he says. "But I think they're just doing what they naturally do." And that may be the most remarkable thing of all. ■

WHO DO DOLPHINS RESPOND TO?

Not everyone, according to Horace Dobbs. He tells the story of a very wealthy American woman who came over to swim with a dolphin in Wales. The dolphin was playing with Horace and his assistant when the woman shouted at them from the boat to get out of the way. When she jumped into the water, the dolphin immediately cleared off. "It's an attitude of mind they pick up on," Horace says. "The woman had money and success, and she thought she could buy the experience. But the dolphin wasn't playing." Humility and patience are the keywords of success with wild dolphins.

As well as homing in on those who are ill, depressed or pregnant, dolphins seem to have a particular affinity for children - perhaps because they naturally inhabit the creative "theta" brainwave state. Dolphins are curious and playful, and like interacting with people who do things. Don't focus your attention on them, advises Horace Dobbs, but engage their curiosity in other ways, perhaps by laughing underwater, or playing catching games with leaves. You should never try to touch wild dolphins. But if you are lucky, they may give you a "dolphin kiss" where they come up so close to your skin that the gentle movement of water between you is like a soft touch of the lips.

FLIPPER THE HERO

Dolphins have a long history of rescuing humans. Mark Simmonds, director of the Whale and Dolphin Conservation Society, says there are two main types of rescue: supporting swimmers to keep them from drowning, and protecting people from attack by sharks.

● Elin Gonzalez, the six-year old boy currently at the centre of a "tug of love" struggle between his father in Cuba and relatives in Miami, was the sole survivor when the raft he was on with his mother and stepfather sank. He says dolphins kept him company during the three days he spent floating on a tyre in shark-infested waters.

● In 1996, Martin Richardson, from Essex, was attacked by a shark off the Egyptian coast. He was bitten four times and later needed 200 stitches. Three dolphins swam to his rescue and circled around him, keeping sharks at bay until an emergency dinghy was able to reach him. Elizabeth Misry