





# A NEW SPIN ON REHAB

*The severely injured are increasingly challenging their disabilities through pedal power. Andrew Mernin heads to the Devon countryside to join the rehab cycling revolution.*





## THERAPY

**W**illiam Pales was a true adventurer who, as an accomplished sailor, crossed the Atlantic Ocean several times.

Then came a massive stroke just after retirement, which locked him out of his beloved great outdoors and into a world of daytime TV.

The timing of his stroke was all the crueller given that he had recently bought a cottage on the edge of Dartmoor, ready to be restored. The wild, epic landscape outside was so close, yet, due to several physical challenges, so very far away.

His son Tom wasn't prepared to see his old man live out the rest of his days in his living room. His intervention broke him out of his sofa sanctuary – and spawned an emerging type of therapy which is increasingly being used by clients undergoing neuro-rehab. Tom, whose father passed away last year,

says: "He had a lot of frontal lobe damage and was a different man after the stroke, with a lot of challenging behaviour. He'd also lost his balance and complete use of his left side - and had agoraphobia and a terrible fear of falling."

The stroke was in 2002, when Tom was 25. Initially, he began taking his father on a weekly trip to the Granite Way, part of the Route 27 cycle journey linking Devon's south and north coasts.

They took a short walk on the tarmacked path, leaving a marked rock at their furthest point every weekend. Over the months the rock travelled 150 metres, but no further.

"Then one day a man cruised past with a wide smile on what looked like a sofa with pedals. We had seen our first recumbent trike.

"Dad was very cold on the idea but I just thought it looked like an incredible remedy to the situation. Dad had done his own maths and worked out that he was pretty much

checkmated, but I was really keen to persevere."

They bought a recumbent trike and, within the week, flew past the 150m rock, towards a life of increased freedom for William.

"That was the start of rehab cycling, and I began to work with others. If I could handle my dad, I could pretty much handle anyone. He was a big chap and had some pretty challenging behavioural problems."

Having abandoned his career in property management, gained a degree in health and social work - and worked as a community support worker with people with brain injuries – Tom finally launched Freetrike in 2010. The service runs one-to-one sessions on specially adapted recumbent trikes for people with disabilities in Devon.

It transports housebound clients to their nearest shared path for two hours of exercise. Tom's work spans Devon's National Cycle Network, which gives access to the





countryside in and around Dartmoor. Stately home driveways and horse racing service tracks are also occasionally used. Freetrike has covered almost 9,000 miles since 2010, working with people of every type of disability, including those related to stroke, brain injury and neurological conditions. "My first paying client was a beef farmer who had suffered a stroke and developed a terrible fear of falling. Recumbent trikes are very stable and in control and, therefore, remove this fear.

"Next I worked with a young chap who was involved in a motorbike accident. You could see his multidisciplinary team was struggling with his challenging behaviour so they brought me in and I whisked him off to the Tarka Trail; 46 miles of tarmac in North Devon on a disused railway. I got him out exercising and eventually supplied him with his own trike. For him a lot of it was about anger management, while it also helped him to concentrate. He was later able to go to college."

Recumbent trikes are lightweight, can collapse down and easily be placed in the boot of a car. Some clients may progress from a recumbent to an upright trike then on to a 2-wheel bicycle and develop the confidence to go it alone.

Freetrike works with specialist manufacturers to fine-tune trikes to specific types and levels of disability. These are sold or used during sessions.

Powered by the mantra, "adventure-bound not housebound", Tom aims to give clients the freedom to challenge their disability while reconnecting with the outdoors.

"It's like being in a deck chair, with pedals in front of you. The steering column is almost at your hips, and can be steered from one side if required. There is also a single brake lever on one side, which, when squeezed, is perfectly distributed across both sides."

Other modifications include specialist pedals designed for people paralysed on one side, which keep the paralysed leg in a stable position. For particularly weak clients, more pedal power can be generated through clever bike gadgetry. Some models have brake levers which can be operated by the >

*Road trip: Tom (right) with one of his regular clients who previously suffered a stroke.*



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knee for riders unable to grip a brake lever. Motorised recumbent trikes are also available.

"We offer a root and branch level of adaptation. We've sourced the best equipment, and I believe the recipe is spectacular and won't let people down. It's really a lovely thing when you see a client go off into the sunset with their equipment and it keeps working for them, and you don't hear from them again."

Another key feature of a recumbent trike is its appearance - not as a piece of disability equipment, but a "cool piece of kit".

"It moves people out of the sick role. They are out doing something clearly recreational on equipment that is made for performance, not disability. It gives them back their identity. The trike hasn't got any hint of a special-needs piece of equipment about it. This is such a powerful ingredient of the medicine. "When we meet a member of the public, the encounter is never about the disability, it's about the bike or the location."

Often, talk also turns to Sophie, Tom's Labrador who regularly comes along for the ride.

"For people with traumatic brain injuries, or limb loss, they are going through a grieving process. Sophie brings them out of it, and has a magical effect on them. She runs alongside us, jumps in and out of the water and draws members of the public in to talk to us. For some people, the sessions are very much about the social element, for others it's more about seeing nature and the changing seasons.

"With a lot of clients, it's the cup of tea and a biscuit at the end of the ride that they really look forward to."

Although no significant body of clinical evidence specifically linking recumbent trike riding with reduced depression exists, cycling in general is known to alleviate stress and anxiety. It has even been shown to alter the structure of the brain, according to reports. A neuroscientist at the Cleveland Clinic Lerner Research Institute in Ohio rode a tandem bicycle across the state in 2003 with a friend with Parkinson's. Surprisingly, the Parkinson's patient showed significant improvements. A subsequent study of 26 Parkinson's patients



using stationary exercise bikes provided further evidence. All patients improved and "tandem" patients - who were encouraged to keep up with a faster partner - showed significant increases in connectivity between parts of the brain responsible for motor ability.

While keen to get involved in any future studies about the impact of recumbent trikes, Tom has plenty of anecdotal evidence of the healing power of three-wheeling.

"It helps clients manage their depression and also their anger. We find a lot of clients come off antidepressant medication by getting fitter and meeting people through the service."

In terms of physical benefits, recumbent trikes are an attractive prospect to physiotherapists, whose clients require repetition of movement which is often hard to recreate in a clinic.

"If you have a client doing 15 miles a week over 52 weeks that is an awful lot of pedalling. We are very careful not to go down the route of saying this is a cure, but I do use the phrase 'rehab cycling' and am very happy to do so because it definitely moves people closer to where they were before their injury or illness."

Transfers in and out of the trike are an important part of the process.

"Moving from a wheelchair to the van, the van to the trike and then in out of the trike when they need to spend a penny, means there are a lot of good transfers and they have

ownership over those. To me the transfers are one of the most valuable things about the experience. If we did a qualitative study on this, I'm sure carers would say they find their clients easier to assist after a run of recumbent trike sessions. Obviously, cycling is also getting all the organs working, the legs going and the whole body stimulated." With over 150 miles of shared paths on converted disused railways, or flanking rivers and canals, Devon is an ideal location for Freetrike.

But Tom aims to spread rehab cycling further afield. This year he plans to recruit five fellow rehab cycling instructors, partly to allow him to spend more time exploring opportunities to spread the service beyond Devon. The main reason, though, is to enable groups of disabled riders to venture out into the countryside together. Recumbent trikes can be connected together like Lego, meaning large groups could theoretically be carefully guided through busier areas or trickier terrain, before being separated out.

The cost of a recumbent trike varies from around £800 for a second hand "entry level" model to £6,500 for a brand-new, motorised version.

"It's not cheap to buy the equipment if you want to go it alone, but it's an incredible investment in comparison to the cost of modifying a house. Compared to the cost of adding wet rooms, stair lifts and ramps it is a drop in the ocean. The change really can be spectacular. I've seen people who are actually fitter now than they were before they had their stroke.

"For a lot of young people with head injuries, the bike has become something positive to focus on, instead of food, alcohol or the opposite sex, which can be problematic after brain injuries."

Tom has around 35 clients on his books at any one time, but this year's expansion should significantly increase this figure. He admits his role is far from easy, given the exertion of transfers and excessive driving hours. He wouldn't swap it for all the gold in Bradley Wiggins' trophy cabinet however.

"I love the locations and the people - and I must have the most spectacular office in the world." ●