

# Health

## Cycling with Parkinson's Mary Francis Dunham

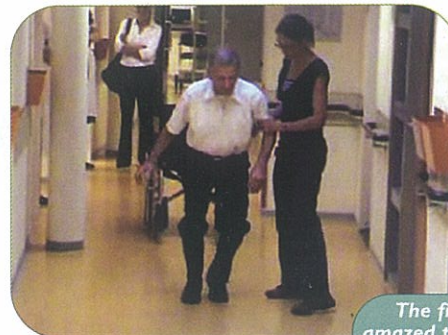
Following an article in the *New York Times* (31st March, 2010), I became interested in the possibilities of cycling for those with Parkinson's disease. The subject of the article was a 58-year-old from the Netherlands in his tenth year of Parkinson's, while I am 78 and in my fifth. These differences may be significant, although I don't know yet in what way. The Dutch cyclist needs to be helped onto the seat of his bicycle, but once on board, he can ride for six miles and even perform U-turns. I can seat myself on the bike unassisted, but I cannot yet cycle further than a mile or two, and I am still shaky in making a right-angle turn!

Amongst other symptoms, the illness causes Dyskinesia, a sort of paralysis of the limbs that prevents walking. There are well documented examples of Parkinson's sufferers walking, running, and even dancing when provided with very clear visual or emotional cues, but this effect - known as the Kinesia paradox - only lasts for a few minutes, so the discovery in the Netherlands that patients can, and regularly do, cycle for miles has amazed the experts.

The most surprising aspect is that despite the advance of the disease, my sense of balance seems unimpaired, and once I am moving I can ride like any other cyclist. The trick seems to be getting started, which is rather like learning to ride from scratch, but once moving, there is no sign of dyskinesia while pedalling. Perhaps this is because the bicycle wheels and not the legs are carrying your weight, thus giving more leg and foot strength and flexibility.

After I was diagnosed, I was warned not to cycle. When I objected, my doctor recommended riding with trainer wheels, but this was arduous because the extra drag from the wheels required extra muscle strength, and the slightest slope on the pavement made me feel as though I was listing, if not tipping over. Do children using training wheels notice this or simply pay it no heed? Do child and adult tricycles feel more stable because of the greater width between the back wheels? I certainly found the sensation disconcerting. Furthermore, slight faults in paving required me to stop and dismount to pass over them and slight inclines in the road seemed to require unusual muscle energy.

Three months ago I removed the trainer wheels and started to relearn how to mount and pedal my bicycle. I discovered that if I followed a step-by-step plan for mounting I



The film that amazed the medical establishment. The patient was unable to walk unaided, but given a push start, he could ride a bike quite normally

could cycle. First I had to be comfortably seated with both feet on the ground, then I gave a strong push down on the pedal on one side while I lifted my knee on the other in order to place my free foot on the other pedal when it came along, completing the first pedalling cycle. Eureka! If I could balance long enough to complete this manoeuvre, I could continue pedalling. The scary listing sensation was gone, and once underway I was able to

cycle at 6-10mph on the sidewalk and faster on the open roadway. Since the early 1970s I have ridden folding bikes quite exclusively, not only because I travel a great deal, but because the seat and handlebar heights are adjustable to my short frame (5' 4"). After the onset of the disease, I experimented with two different styles of folding bike, and discovered some intriguing things about the body's mysterious retention of balance and ability to relearn how to cycle.

When I tried to ride a full-size adult bicycle I failed to get started, even with the saddle as low as it would be on my folder. Not only are folders adjustable, but the low step-thru frame allows me to get seated safely. This feature proved especially helpful in relearning to cycle after the onset of the disease. For some reason, having the tyres fully inflated is important, perhaps because soft tyres - even slightly soft - require some extra muscle power that I seem to lack. Meanwhile my arms feel a slight strain in guiding the handlebars, something I don't remember during my 70-plus years of frequent cycling. I found I preferred riding an unusual folder that I bought here in Shanghai. The front wheel is 8-inch, while the back one is 16-inch. The handlebar stem and straight bars are closer to my seated body than with my Dahon, and I find this unusual folding bike easier to handle.

The experience of re-learning to cycle has made me realise that when I used to teach adults to cycle I failed to appreciate how much technique must be self-acquired. To teach them balance I used a foldable (ie adjustable) bike with pedals folded or removed. Even learners could balance for long periods while riding down a slight slope, but when the pedals were restored, they would fail to make the transition from coasting to pedalling. Children often come to cycling after a head start from scootering or using a pedal-free bike, while adults without this experience may need to supplement it by experimenting with different techniques. But I was especially intrigued that small wheels made the process easier, and there does seem to be some neurological factor here worth studying. I am still experimenting in the hope of increasing the length of my rides, but I shan't forget that magic moment when - in spite of Parkinson's infirmities - I walked on pedals instead of the ground.



### The Science

- Parkinson's is a progressive neurological condition, affecting both balance and co-ordination
- Dyskinesia can 'freeze' the body for seconds or minutes, preventing voluntary movement and introducing involuntary jerks and shakes
- Experts agree that exercise is therapeutic, and may even hold back the advance of the disease