



The arm I made myself has changed my life

Father of invention

After losing his arm, Mark's DIY skills changed his life ...

Feeling a tingling in the fingertips of my right hand, I stared at the doctor in disbelief.

"You're kidding, right?" I said in shock.

It was December 2003, and I'd had a terrible car accident while driving to my holiday home in Coles Bay, Tasmania.

The doctor at the Royal Hobart Hospital had just told me that my right arm had been amputated below the shoulder.

"But I'm closing my right fist now," I insisted.

"Your mind is playing tricks on you," the doctor said, bringing out a mirror.

My reflection made me gasp in horror.

My whole arm was gone.

"You're alive and that's all that matters," my wife, Angela, 46, wept, as I lay there panicking about

all the things I realised I could no longer do.

Looking at our sons, Andrew, 21, and David, 18, I knew Angela was right. At least I wouldn't miss out on seeing our boys get married or my future grandkids.

With Angela's help, I continued to run my welding and engineering business from the hospital.

In February 2004, I went home. I had been right handed, so learning to write and brush my teeth with my left hand was tricky.

Doctors explained my amputation was too high for a normal-socket prosthesis.

I discovered that most above-elbow amputees didn't wear a prosthetic arm because the arms available weren't very good and were expensive.

But I was experiencing a bizarre chronic tingling pain which inexplicably seemed

to stem from my now-missing arm. It was only when I tried on a prosthesis that the pain disappeared.

In October 2004, the local prosthetic clinic made me a light, electrically powered arm but it didn't work well.

Using my background in mechanical engineering, I worked on the fake arm to improve the functionality. I wanted the hand and fingers to close like normal and pick things up.

Then, in March 2005, I was fitted with an \$80,000 arm made in Germany, which I wore for a year.

I was able to hug my wife and shake hands limply, but I still couldn't dress myself and driving was tricky.

The arm kept breaking down, meaning I couldn't bend it or move the wrist.

If it wasn't so frustrating it would have been comical.

Sending it to Germany

for repairs set me back a whopping \$6000.

"I'm going to design my own arm," I said to Angela.

So in August 2006, using my left hand, I drew the design of a prosthesis on a piece of paper.

The employees from my engineering firm helped me make the first prototype out of lightweight magnesium in a few weeks.

We kept testing the arm on me until we were happy.

I also started working with the University of Tasmania to develop a more agile computer-controlled arm.

In January 2008 I had a bolt implanted into my shoulder and we attached the arm I built to the bolt.

Together, the bolt and my prosthesis have relieved the phantom limb pain.

It has also meant I'm now able to lift boxes, help around the house and drive. It's given me an enormous sense of achievement.

But I still try to shirk the dishwashing duties.

"I can't get the robotics wet," I chuckle to Angela.

"Yes you can, it's waterproof," she scolds.

I now hope to manufacture more fake arms like mine and make them affordable for other amputees.

Mark Leseck, 52, Moonah, Tas.

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