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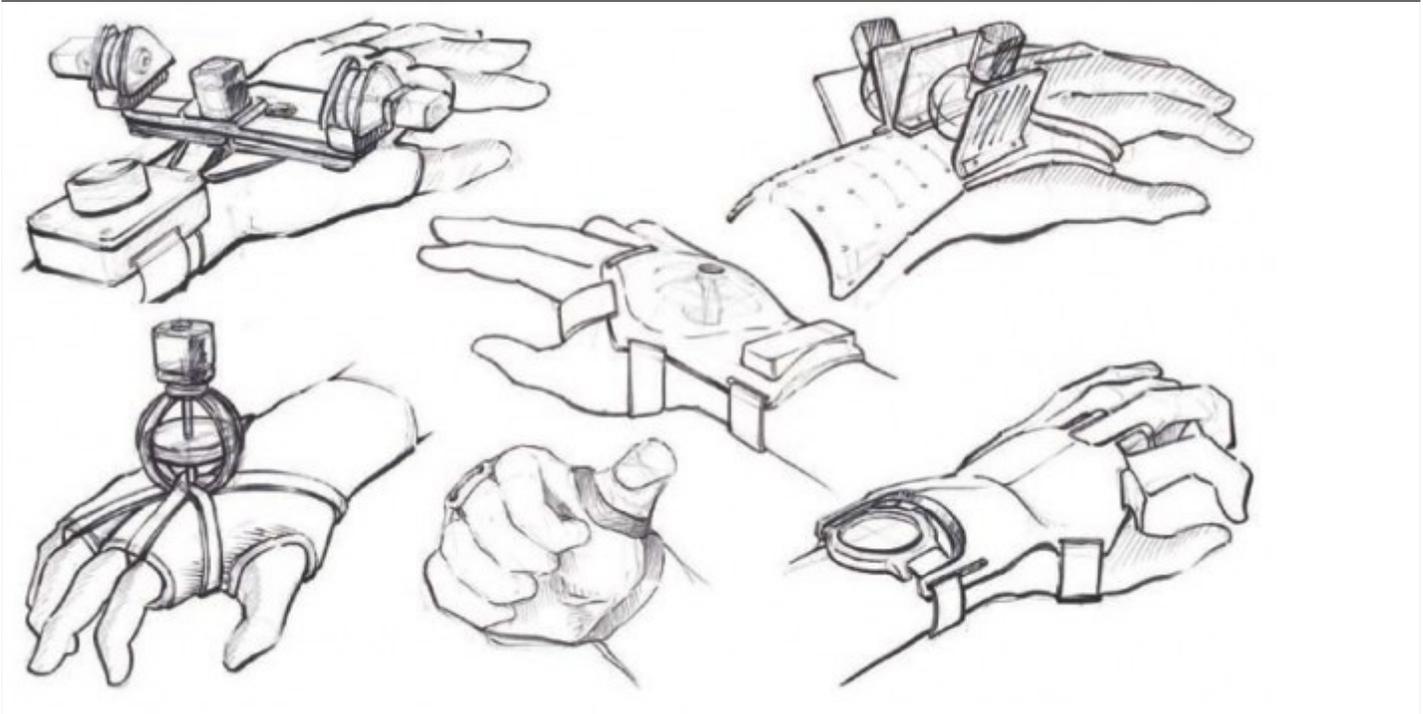
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MIT ENGINEERS CREATE GLOVE THAT MITIGATES HAND TREMORS FROM PARKINSON'S

MIT engineers create glove that mitigates hand tremors from Parkinson's

By [Jessica Hall \(http://www.extremetech.com/author/jhall\)](http://www.extremetech.com/author/jhall) on January 19, 2016 at 9:11 am

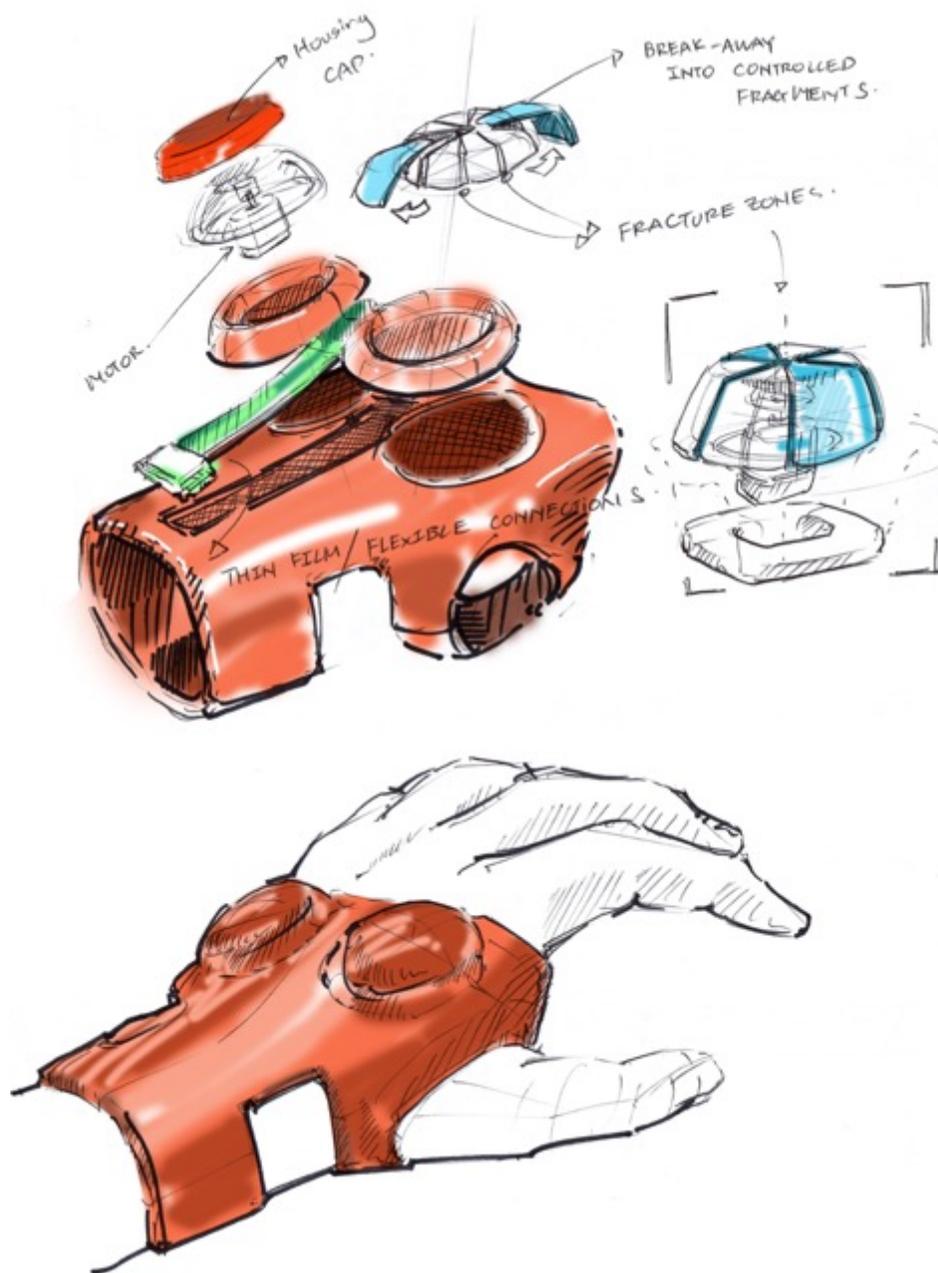
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Quality of life is supremely important for people who have diseases like Parkinson's, which is a fatal genetic disorder that currently has no cure. During med school, Faii Ong met a 103-year-old Parkinson's patient covered in soup, and asked why the nurses weren't helping her. They responded, "there's nothing we can do." The medications for Parkinson's don't work forever, the nurses explained, and beyond a certain point they don't help much at all, leaving little the nurses could help with.

Galvanized into action, Ong went to work. Within two years, he and a "crack team of engineers, designers and medics" have gone on to win the first inaugural £10,000 F-factor prize and produce the GyroGlove: a wearable device designed to mitigate the hand tremors suffered by Parkinson's patients.



<http://www.extremetech.com/wp-content/uploads/2016/01/Design-Sketch-GyroGlove-0201114-Benjamin-Koh.jpeg>

Diagram of the GyroGlove's innards. Credit: GyroGear

The GyroGlove is a cordless thin-and-light wearable hand stabilizer. It's powered by a battery, with a tiny integrated controller that drives a precession hinge and turntable, and a responsive gyroscope. The gyroscope isn't a detector — it's an effector. And it has to move "silently and reliably at thousands of RPM." With a motion disorder like Parkinson's, the impedance of a person's normal movements is a major detractor from quality of life. That's why the device has to be so light, and why the gyroscope has to rotate so fast: It must be responsive in real time to the wearer's moving hands, *without* encumbering their movements and making the solution more onerous than the problem.

http://www.extremetech.com/wp-content/uploads/2016/01/Gyroscope_operation.gif) The way it works isn't rooted in technological bells and whistles, but instead in straight-up rotational kinematics: a new application of a well-established principle. "Mechanical gyroscopes are like spinning tops: they always try to stay upright by conserving angular momentum," Ong explains. "My idea was to use gyroscopes to instantaneously and proportionally resist a person's hand movement, thereby dampening any tremors in the wearer's hand." Testers report that using the device is like plunging a hand into thick syrup: motion is free, and slower. Benchtop research showed that the GyroGlove was capable of reducing hand tremors by 90%.



The GyroGlove uses a gyroscope not unlike the control moment gyroscope used on the International Space Station, the one that allows it to pivot in space without using fuel. It's simple, easy to manufacture, and it can be made very small. This low-overhead application is why the GyroGlove's power pack can be so thin and light: it doesn't require a big battery to do what it does.

While there are still some bugs to be worked out concerning weight and noise, Ong's team is now in the process of getting the device manufactured; they expect the device will cost about \$700 US when it's released, hopefully by the end of this year.

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Kyle • 8 months ago



I've met a few people with bad hand tremors. I think this would improve their quality of life drastically.

It's nice to see practical medical advances that don't rely on new medications that would require years to get approved.

6 ^ | v • Reply • Share ›

Vidya Wasi → Kyle • 8 months ago

This reminds me of the spoon with a "jello" grip. Grip is attached to a metal short spoon. Dampens the shaking before it reaches the spoon. No battery required. Good results. Can not find the video demonstrating it :/

new medications that would require years to get approved

That's one of the blacksheeps in the medical industry. Quite frustrating that people allow politics, paperwork and lots of people who's more concerned with covering their backside to take priority before people in need.

It's good to check that medication is safe but this is ridiculous.

Replace it with another system of gradual safety perhaps?

Allow people to take the medication immediately while it's going through the approval stage but be notified of the risks in a percentile way. Percentile being the most recent preliminary results of the approval stage.

To prevent medicine companies from exploiting this (because they will and are already) they get a strike, fine and years of penalty that's added to each new medication they submit for approval. Meaning the risk is higher for the next medication they submit, if they get caught

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RogerD • 8 months ago

Fantastic idea. Relatively simple and low-tech. No med's, etc. Even with a (probably) \$200 'medical device premium' add-on, it seems far less expensive and much more effective than many drug therapies.

^ | v • Reply • Share ›

Moose442 • 8 months ago

BRILLIANT!!!

1 ^ | v • Reply • Share ›

ephoenix6 • 8 months ago

"Perhaps inspired by the low-power requirements of GyroGlove uses a gyroscope not unlike the control moment gyroscope used on the International Space Station, the one that allows it to pivot in space without using fuel"

^ | v • Reply • Share ›

iGranny • 8 months ago

Please help me get one of these to my son who was diagnosed with young onset parkinson's at age 32. (he has stopped eating in public) He desperately needs this invention Thank you

1 ^ | v • Reply • Share ›

janetlorusso • 8 months ago

— | 🗨

iGranny, I feel his pain. I don't have Parkinsons, but was diagnosed with Essential Hand Tremors. It's very hard eating, as is cooking or any normal activity that involves your hands. I am on disability because of it. With using the computer, I use 1 finger of each hand. FAIL ONG, if you need another tester, please email me at loru1111@aol.com. I surely would be interested. Thanks so much for taking on this invention!!!

^ | v • Reply • Share ›

L Formosa • 8 months ago

— | 🗨

Oh dear. It looks like this idea was patented in 1991 - <http://www.google.co.uk/patent...>

Hope they can get around that :/

^ | v • Reply • Share ›

Donna Waugh • 8 months ago

— | 🗨

I would love for my father to be able to participate in clinical trials for this

^ | v • Reply • Share ›

Eugene Ho • 8 months ago

— | 🗨

Imperial College London engineers, not MIT

1 ^ | v • Reply • Share ›

JRQuilcon → Eugene Ho • 8 months ago

— | 🗨

Represent!!!

^ | v • Reply • Share ›

oldbithead • 7 months ago

— | 🗨

I have had tremors since my early 20's. Now that I am 73 they are getting worse by the year but not so bad I can't function. This glove looks like a great invention.

A little humor about it can be therapy in itself so here are two comebacks I use;

My doctor asked me if I drank a lot. I said, "No I spill most of it".

When he told me I had "Essential Tremors" I said, "Well if they are so essential then mine are for sale". Forgive me if that offends anybody but I love to laugh.

^ | v • Reply • Share ›

Thomas Wascher • 4 months ago

— | 🗨

Has this been tested or considered for people with non-parkensons tremors?

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