

PEELERS

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User Experience Design

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Type 1
(Peeler 1)

Wilko Peeler
Materials: Plastic
handle, metal-
Stainless steel
blade
Weight: 25g



Type 2
(Peeler 2)

Tesco peeler
Materials:
Metal- most
likely stainless
steel
Weight: 54g



EMPATHY TESTING



Empathy testing is used in design to gain an understanding of the problems and difficulties faced by people with disabilities. In this case the disability is arthritis. And it helps us understand the needs of the people who have these problems.

To gain the information we needed for the peelers we had to tape our hands up to simulate lack of joint movement, the plastic gloves were worn to simulate the lack of tactile senses.

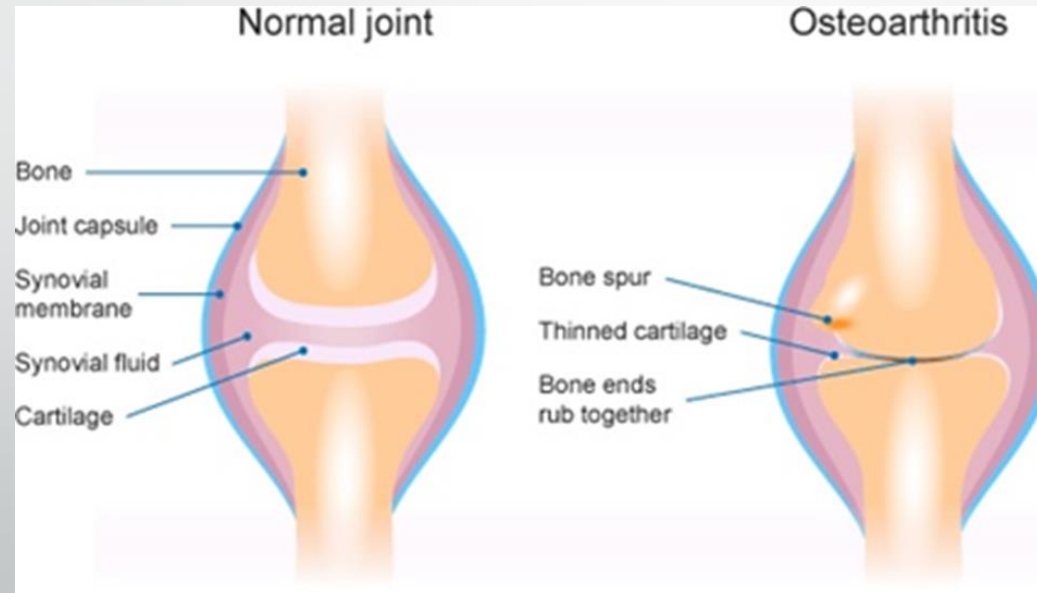


No arthritis



Osteoarthritis: As part of normal life, your joints are exposed to a constant low level of damage. In most cases, your body repairs the damage itself and you don't experience any symptoms. But in osteoarthritis, the protective cartilage on the ends of your bones breaks down, causing pain, swelling and problems moving the joint. Bone growths can develop, and the area can become inflamed.

Arthritis



PEELER TESTING WITH FOCUS GROUP



Jasmin, 22
If it was sharper it would be better than peeler type 2, didn't feel like type 1 was sharp enough. However she preferred the shape and using this, type 1, peeler.



Joseph, 22
Testing Peeler 2, its harder to peel a smaller potato, also if the blade area gets clogged up with peelings it is even harder to use and less likely to peel. Left the potato with a rougher surface after peeling.



Jack, 19
Prefers this type of peeler because its more accurate even though it takes a little longer to peel the potato.



Beth, 22
Had trouble gripping the peeler and making the peeler actually cut into the potato to get it to peel. "The one is utterly shocking." - Beth.



Jack, 19
Thought the peeler didn't remove enough potato peel so he needed to peel it more.
The blade kept spinning around during use.



Beth, 22
The tester thought that using this peeler was hard and felt like she was peeling away a lot of the potato, not just the skin.

Thoughts on these peelers:

Krystian, 19:

Type 2, 100%

It's slightly more awkward to use than type 1 but it's much safer and hence I can peel a potato faster despite having to move the peeler around a bit because I don't have to worry about cutting myself.

It's fine with standard roundish potatoes but more weird shaped ones that have bits sticking out, type 1 would probably be more useful.

However, I feel that I don't come across weird potatoes often, so I prefer peeler type 2.

Paulina, 19:

I use peeler type 1 because it's easier to use and I can't use the other one. I peel away from myself because it's easier and safer.

Grandmother, 80:

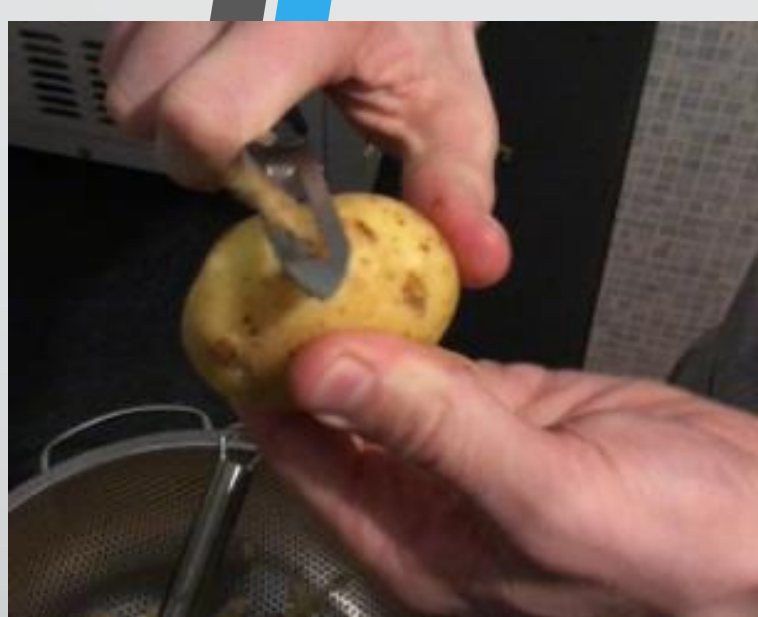
I use a Type 2 type peeler because as my hands get more arthritic I can't grip and peel with the other one. I even have trouble with the silver one now because I can't hold the potato properly with my left hand and often manage to scrape a bit off my hand. When I was younger, I always used the Type 1 peeler. The handle of peeler 1 is better, it has the thumb grip part.

Jack, 19

I prefer this peeler type 1 because its more accurate even though it takes a little longer to peel the potato.

Beth, 22

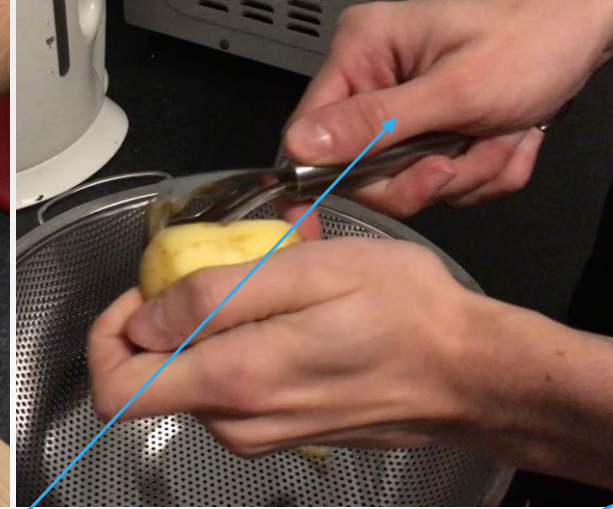
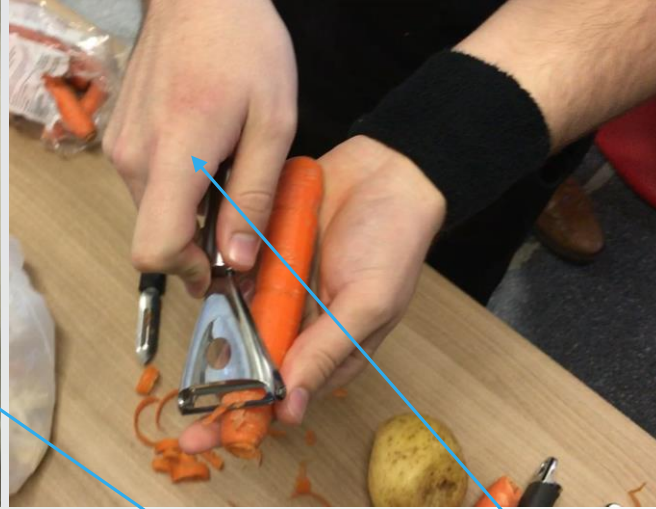
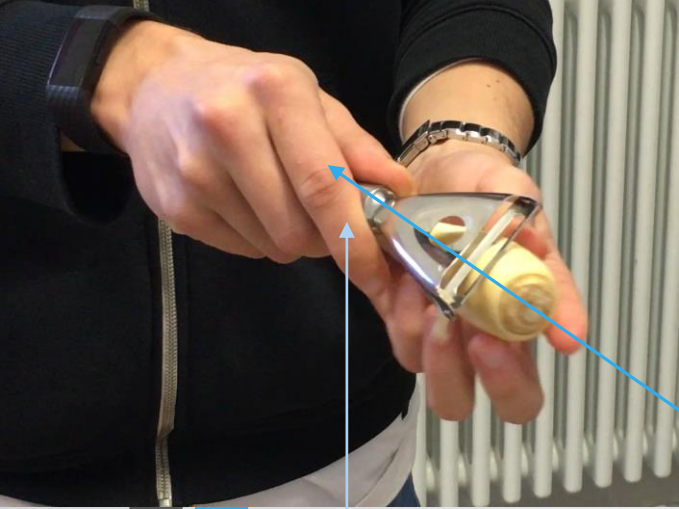
Don't really like this peeler. Its hard to use and I feel it removes too much potato with the skin. (Peeler type 2) Peeler type 1 is utterly shocking.



Seven different people using the same type of peeler (Type 1). Each person using the same sort of technique and holding the peeler and potato in the same way.

Even when peeling different things, the same grip on the peeler and vegetable can be observed.





Only holding the handle.

There are two main ways people hold this peeler, the pictures also should a couple of other ways people hold the peeler but the majority of people exhibit these two ways.

Using the index finger to steady and control the peeler.





New design ideas peeler 1

After observing the way that people hold and use peelers I have found that a lot of people seem to grip peeler 1 in the same way while using it. Gripping the peeler with the four main fingers while using the thumb to guide the peeler across the surface of the item being peeled. To improve the simple design of peeler 1, a more ergonomic handle could be implemented. Also a few people are worried that while using this type of peeler they will cut themselves and that there hands are too close to the blade. So a longer handle with a shielded blade.

All these improvements could be used individually or put together in one peeler.



New design ideas peeler 2

Older people prefer this type of peeler over peeler type 1, the most likely reason for this is because its easier to use and not much force is required to peel skin with it. With the metal handle the people who tested it found that when its wet its harder to hold, as an answer to this the handle could either go between the fingers so that less grip strength is needed and will be easier to hold when wet. This would make it easier to hold for all people including those with arthritis.

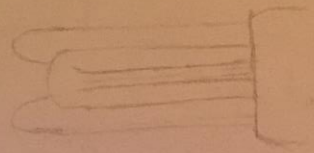
Another way to get around the issue of grip strength is to have a peeler that is strapped to the palm of the users hand.

With the rotating blade sometimes it gets stuck in one position which could be the wrong position making the peeler unusable. An improvement to this which does already exist, is that the blade can rotate but only between two points giving it an angle between which to rotate.



DESIGN IDEAS

Wrist Strap - Rubber
Silicone



Different shaped pointed bits to remove eyes.

Plastic

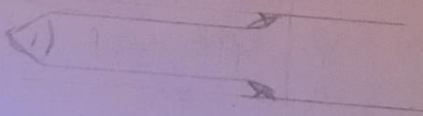
Stops people thinking they will cut themselves.

Metal Peeler

Top view

Squishy grip

Longer handle



Side view

Eye Goggles
After testing with a fixed blade, conclude it needs to be a swivel/rotation blade
rubber/sponge



Handle could be made of thermosetting plastic so that it moulds to the users hand.

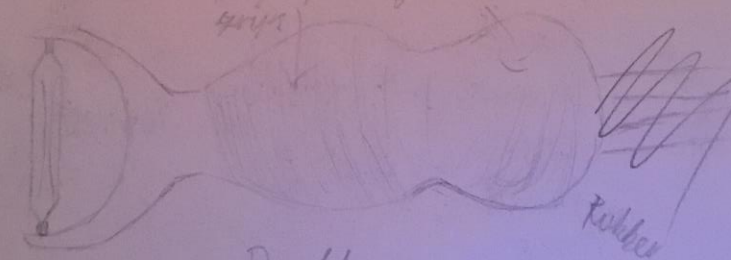
Can be used with limited joint movement

Curved or flexible Blade
Can more like a razor
Thumb or finger controlled?

Razors are like peelers for your face.

flex

Larger parts for hand grip



Double Ended Peeler

Rubber

NEW PEELERS



New Peeler Type 1
Prototype
material:
Mutlimorph
thermoplastic,
metal peeler blade
Weight: 86g



New Peeler Type 2
Prototype
material:
Multimorph
thermoplastic,
metal peeler blade
Weight: 49g





Safety is still very important, especially the safety of the user. With the users fingers being closer to the blade, material was placed around the edges of the metal. This improves safety and comfort for the user and was added when a member of the focus group said they were afraid of cutting them self with this type of peeler.



The overall length of the peeler is 12.5cm. This brings the users hand much closer to the blade. Allowing more control over the blade compared to the previous type 1 peeler. It also very slightly reduces the waste produced compared to peeler 1, but only very slightly.

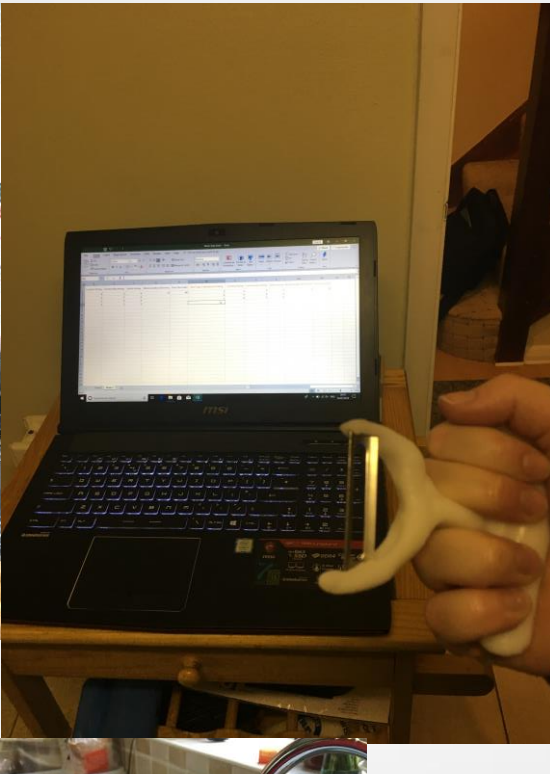
Much wider handle which fits into the palm of the users hand better. Also makes it easier to grip for people who can bend their fingers as much.

New peeler designed to be held in the hand but also through the fingers in the way the peeler blade comes out between the users finger, it provides comfort, ease of use and doesn't require as much grip strength to use.

Gap behind the peeler allows waste to move freely away from the blade unlike the previous version of the peeler.

Can be held between different fingers depending on the users preference.







References:

<https://www.nhs.uk/conditions/osteoarthritis/>