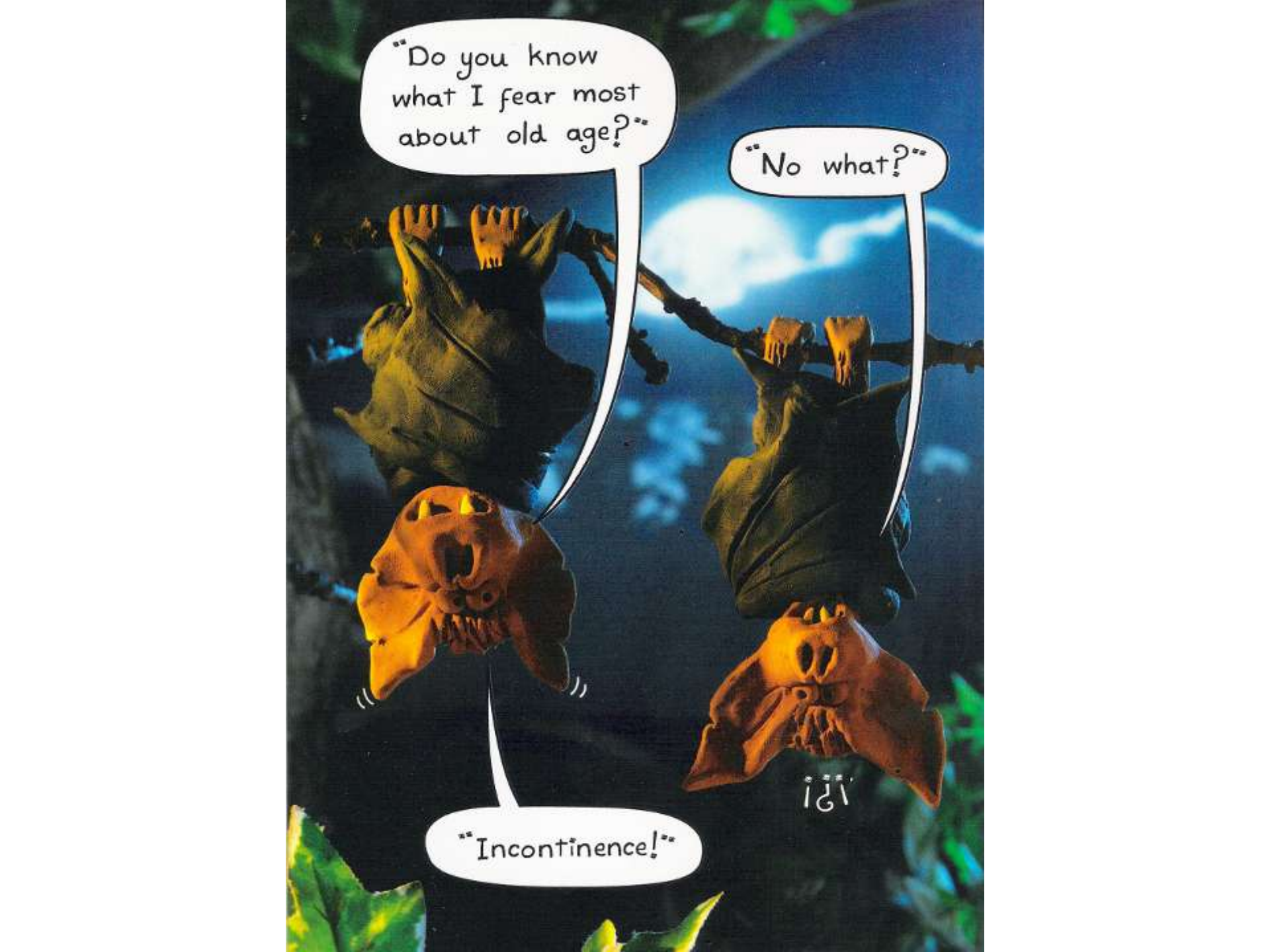


Designing and Developing assistive devices to support ageing continence

Eleanor van den Heuvel
Brunel University



"Do you know
what I fear most
about old age?"

"No what?"

"Incontinence!"

Why older people?

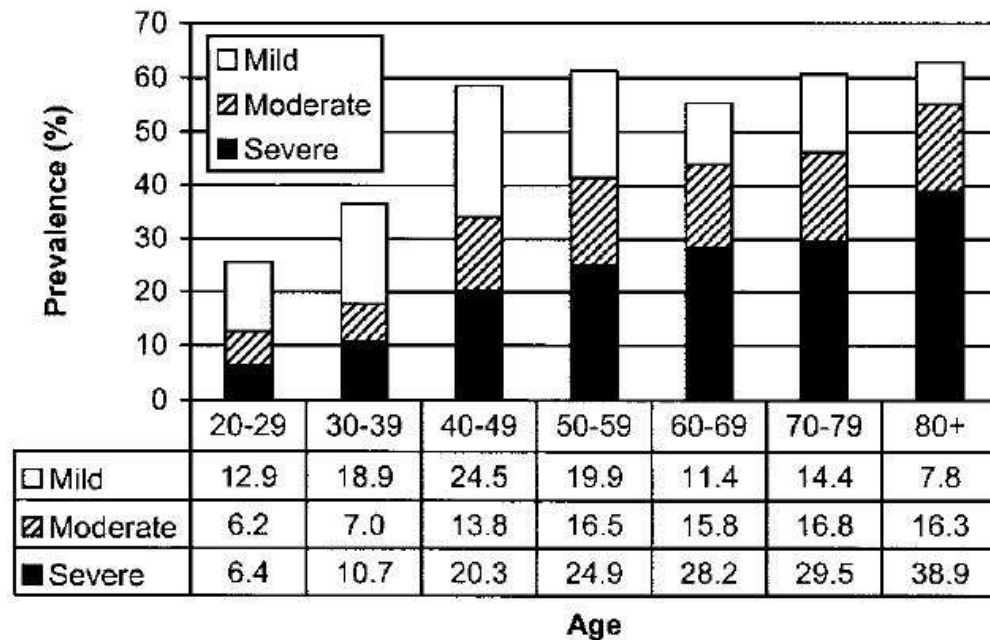


Fig. 4. Prevalence of any urinary incontinence by age and severity.

Minassian. Urinary Incontinence in Women. Obstet Gynecol 2008.

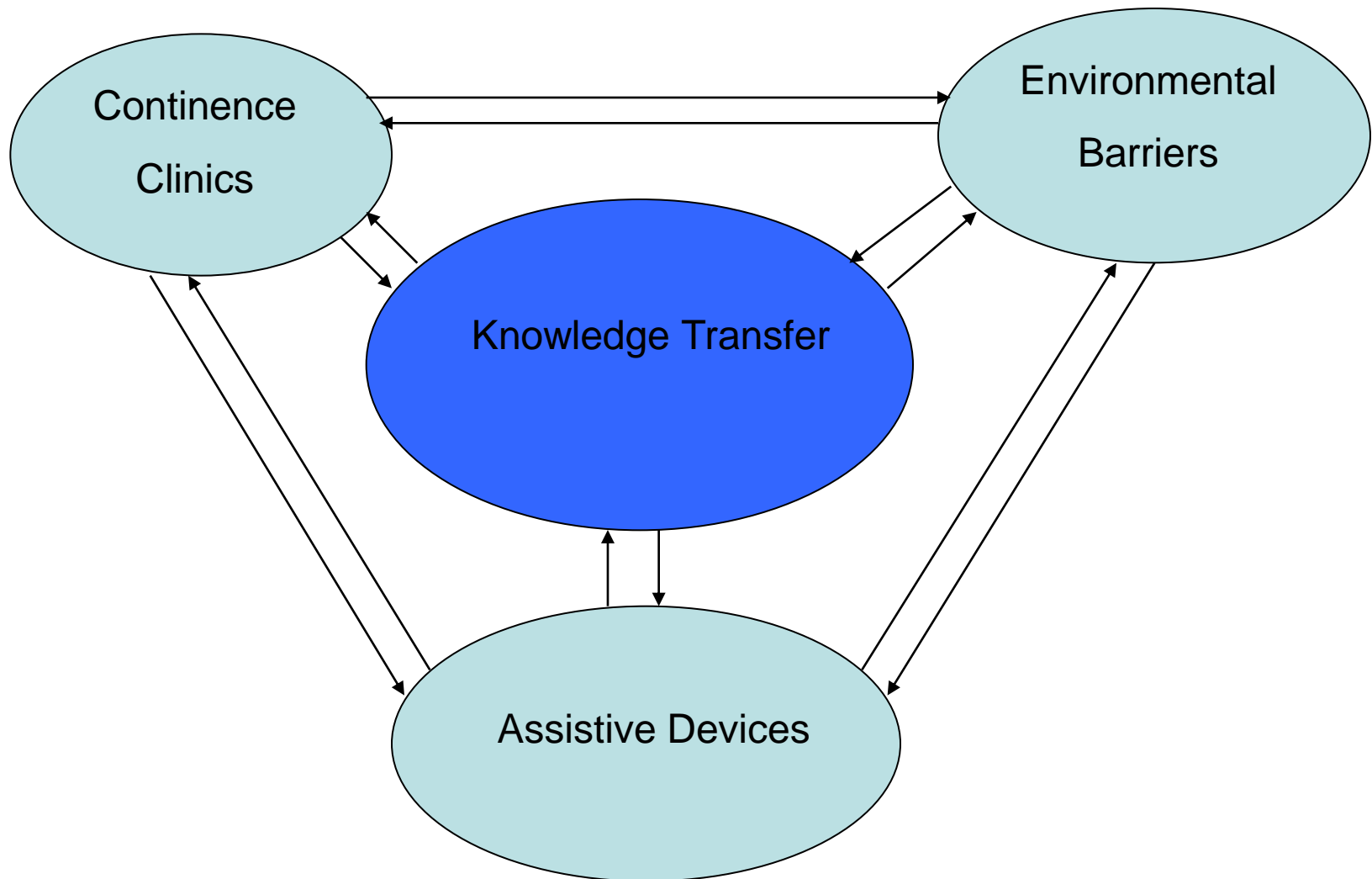
What are continence difficulties?

- Over 70% of men and women over the age of 40 sometimes experience lower urinary tract symptoms (Coyne et al 2009)

What are continence difficulties?

- Over 70% of men and women over the age of 40 sometimes experience lower urinary tract symptoms (Coyne et al 2009)
- But even with perfect bowel and bladder control you can't be continent if you can't access toilet facilities!

TACT3



Challenging environmental barriers to continence



What's the problem with toilets?



What's the problem with toilets?

**“As far as I’m
concerned it’s
neither public
nor convenient.”**



What's the problem with toilets?



What's the problem with toilets?



What's the problem with toilets?



Current Provision

UK public toilet facilities have declined dramatically over last 20 years.

From 15,000 to 5500

Also; design of facilities does not meet actual need



Current Toilet Innovations



What Older people say about toilets

Need better designed facilities

"If I'm desperate I will use the disabled toilet and it's so much better. The grab rails really help and sometimes the toilet is higher. But I'm always worried that someone whose 'worse off' than me may want to use it"

What Older people say about toilets

"I sometimes feel like a little animal, I always go the same way, follow the same path, as I know where the toilets are"

"I use to like to take the train to the next town as there's a shop there I really like. But I don't go there anymore, since they closed the loos on the train station"

What Older people say about toilets

"I lost my husband a few years ago, and I like to go over to the cemetery. But I can't spend as much time there as I'd like as I need to use the lavatory, and the ones there are disgusting... I can't use them... It upsets me a lot".

Social theorists call this 'the bladders leash' where the lack of toilets restricts peoples freedom of movement and the amount of time they can be somewhere.

WORKSHOP







Judith, 60

Ex-councillor
Barnes, London
Enjoys the theatre
High blood pressure

Concerns:

Cleanliness

Public Transport

Evening Provision



*"It's the same as going into my toilet at home.
There's pot purée, there's a lovely arrangement of silk flowers...
If you treat people well then they behave much better."*

*"Water tablets make you go a bit often.
So when I come out for the day
I don't take mine.
Tempting providence."*

*"I don't mind paying
for a cleaner loo."*



Lives in town



Trainee
Teacher

$$2 + 2 = 4$$



RADAR
key



"You can look at a map
of the town, it might tell
you where the toilets are
but its not going to tell you
what they're like"



Signs

Planning ahead

"It would just be a disaster for me if I went
somewhere and they didn't have loos
there ... I would just come home again"

Travels by car



Network of
support



Yasmin, 26

Irritable Bowel Syndrome

"I'm not brave enough to explain
that I can't wait as long"



Crowdsourced iPhone App + Website

Showing **6** toilets in Borough of
Wandsworth

- incomplete, unreliable & out of date



Wandsworth Council Data

Showing **56** toilets in Borough of
Wandsworth

including Community Toilet Scheme

Assistive Technology

- *Developing two assistive devices to help people cope with their continence needs*



Smart Underwear wetness detector

- Why?

Sometimes it affects being with friends because you just don't trust the pad and don't want to leave a wet patch on their seat, so you tend to leave early so it spoils the time with them and they often don't understand why you are leaving earlier than you should.

Smart Underwear design



Underwear styles visual aids

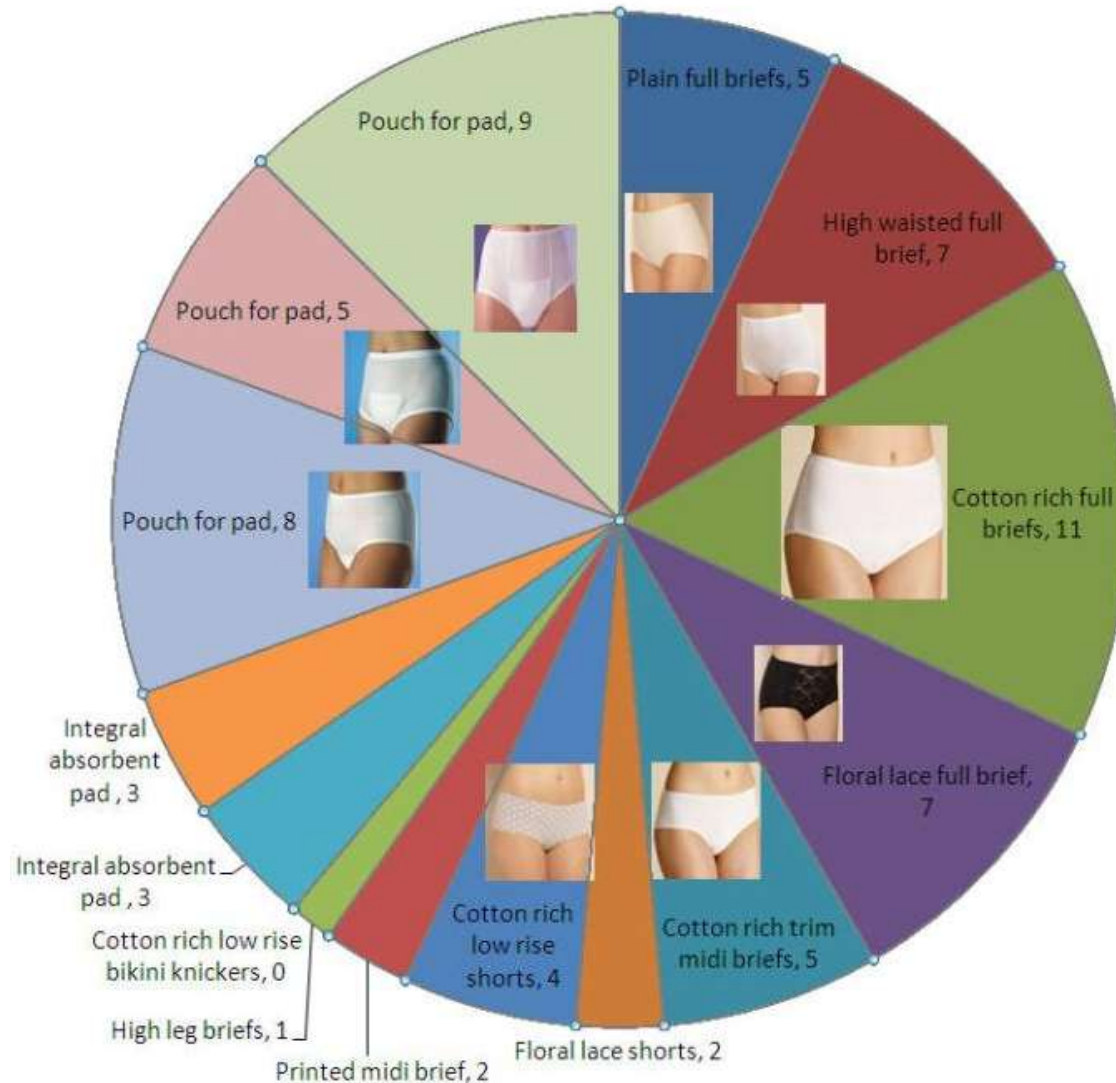
Washable underwear with an absorbent gusset or pouch for a pad



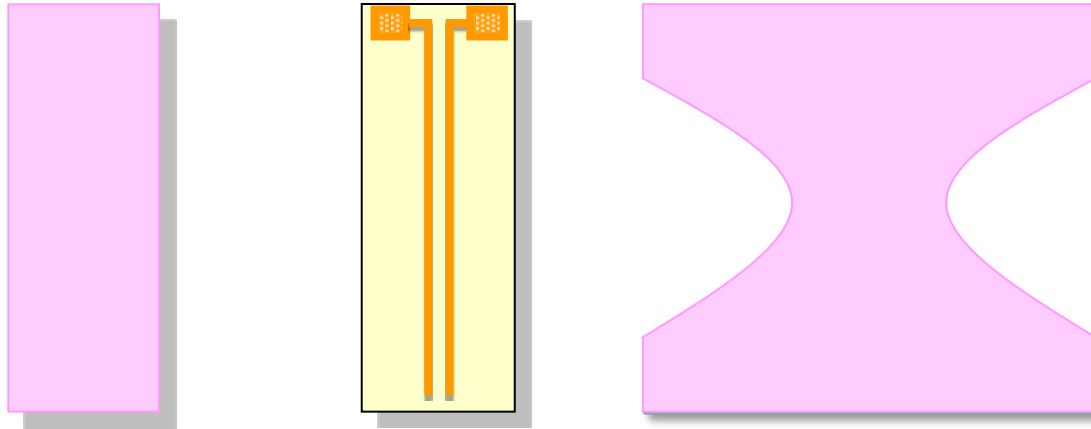
Underwear Styles



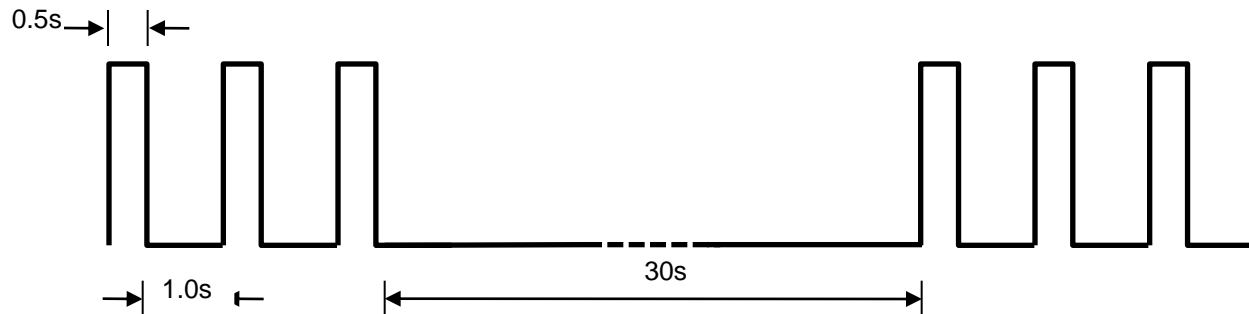
Underwear design



Sensor design



Vibration sequence



Smart Underwear



Clinical Study



Comments

"It gave me more confidence in doing everyday tasks."

"Gave me more confidence, felt 'in control' knew that 'wet patches' would not happen. Overall felt happier."

"It was very good in letting me know when wet."

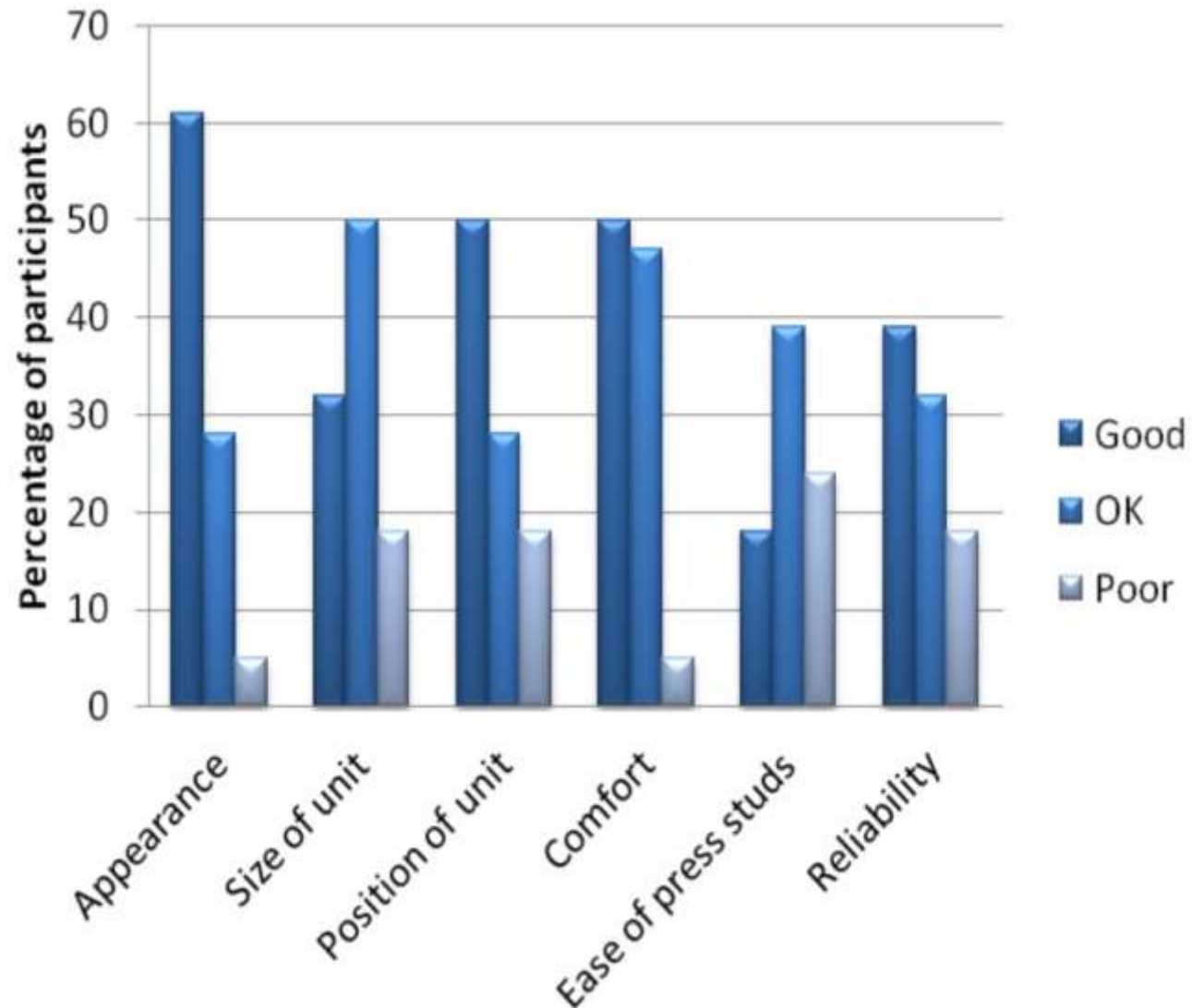
"Very useful, was able to change most of the time. It's a brilliant invention."

"First time in years found comfortable product to assist with condition"

"Felt much more confident about going out without worrying that I was going to wet myself; it gave me more confidence in doing everyday tasks",

"The smart underwear and sensor made me feel more confident as I had warning about leakage; incontinence is something that is embarrassing, this product gives you more confidence to lead a normal life"

Smart underwear design evaluation



What Next?



Collaborators



Project Partners



Technology Sourcing



The new force combining
Age Concern and Help the Aged



For Quality of Life of
Older People in Care



The Simon Foundation
for Continence

