

BATHROOM TRANSFER TECHNOLOGIES:

How can occupational therapy be involved?



Susan Lee, MS, OTR/L
Evan Fowler, MID/S, MBA/S






OVERVIEW

Goal for audience

- Reflection of current OT practice for addressing transfer impairments at the environmental level
- OTs as great source of knowledge for design and development of products and technologies for older adults and their caregivers
- OT's changing role with technology evolution

Goal for presenters

- Your knowledge, thoughts, expertise
 - Building sustainable network for knowledge exchange with designers, engineers, researchers
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IMPORTANCE OF TOILETING & TRANSFERRING

Toileting & Transfer disability as predictors of
quality of life
subsequent disability in other areas of life
caregiver burden
institutionalization
death

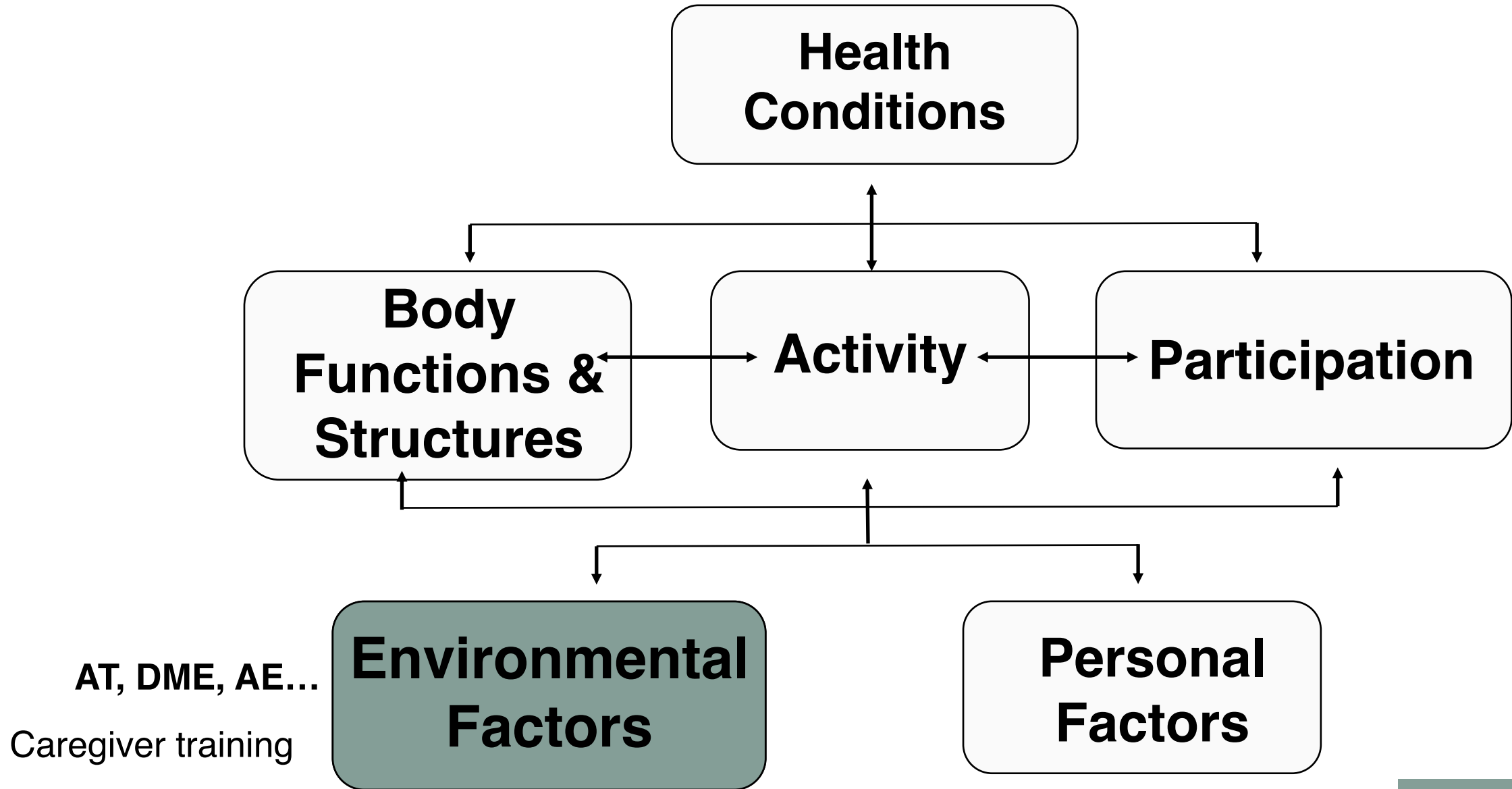
OVERARCHING PROBLEM

Transfers remain one of the most physically
demanding ADL,
even despite best practices

- 4.4 million persons receive hands-on assistance in at least one ADL.
- More than 800,000 persons report unmet need and/or dissatisfaction in at least one ADL, **even despite having caregiver and/or AT support.**

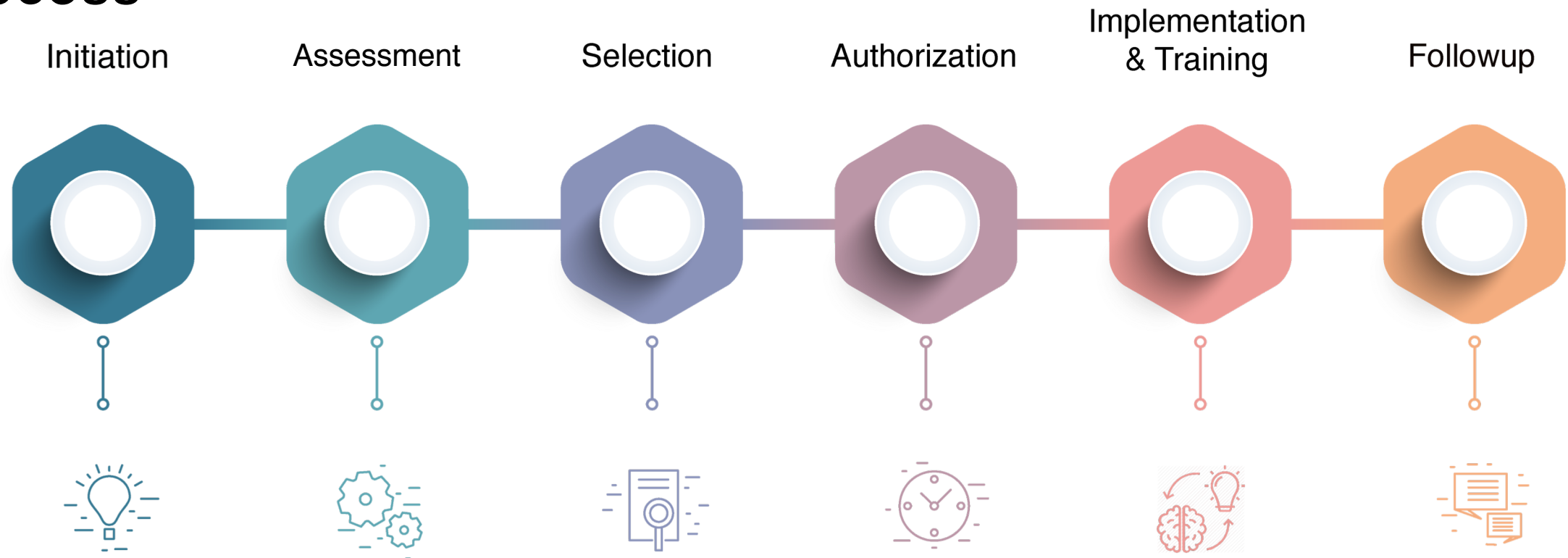
Newcomer, Kang, LaPlante, & Kaye, 2005

International Classification of Functioning, Disability and Health (ICF)



Common OT involvement in current Environmental solutions process

**Involvement in developing new/improved
products, technology, services for unmet
needs?**



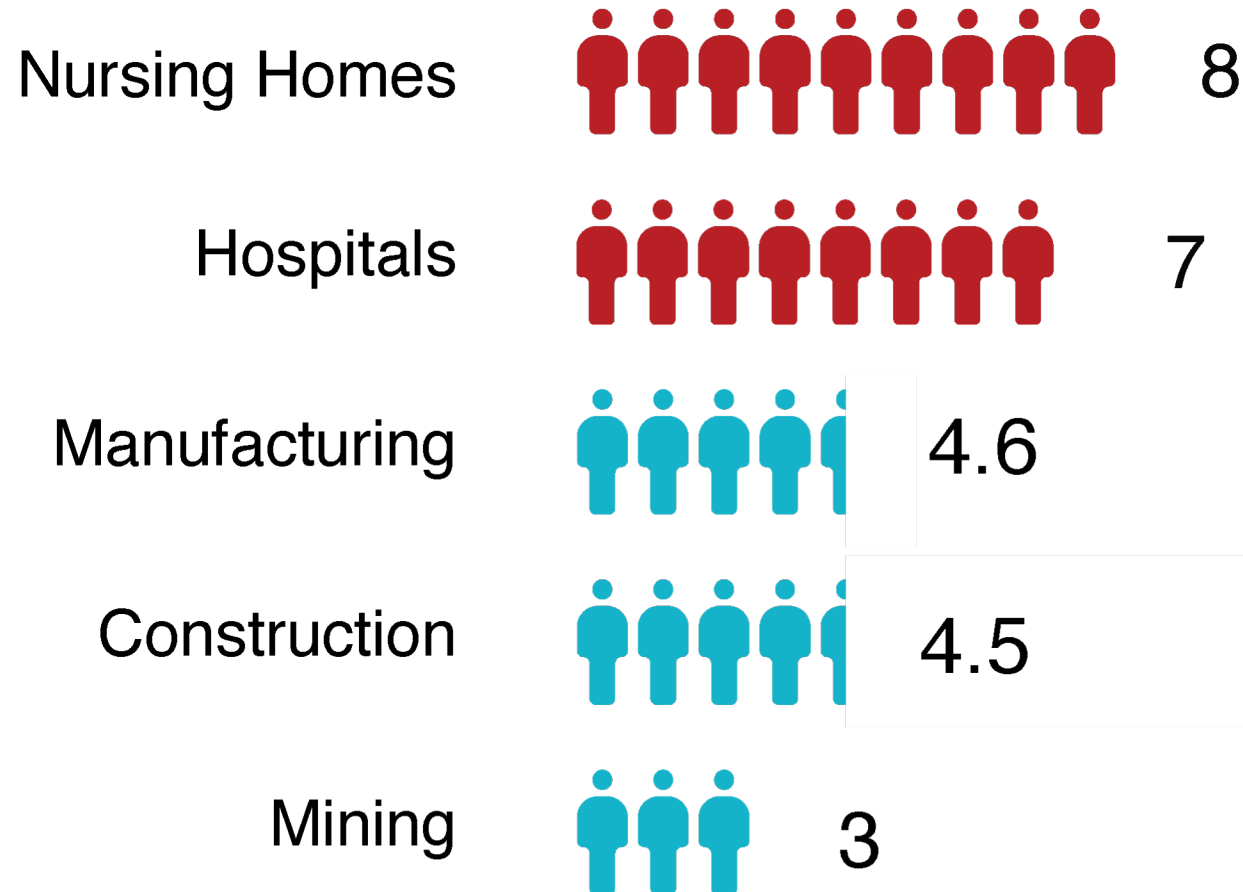
PROBLEM #2

Person-centric interventions do not address
caregiver needs

...We can't assume fully capable caregivers –
they are aging, frail, in need of support
themselves.

Incidence rates of nonfatal injuries by industry

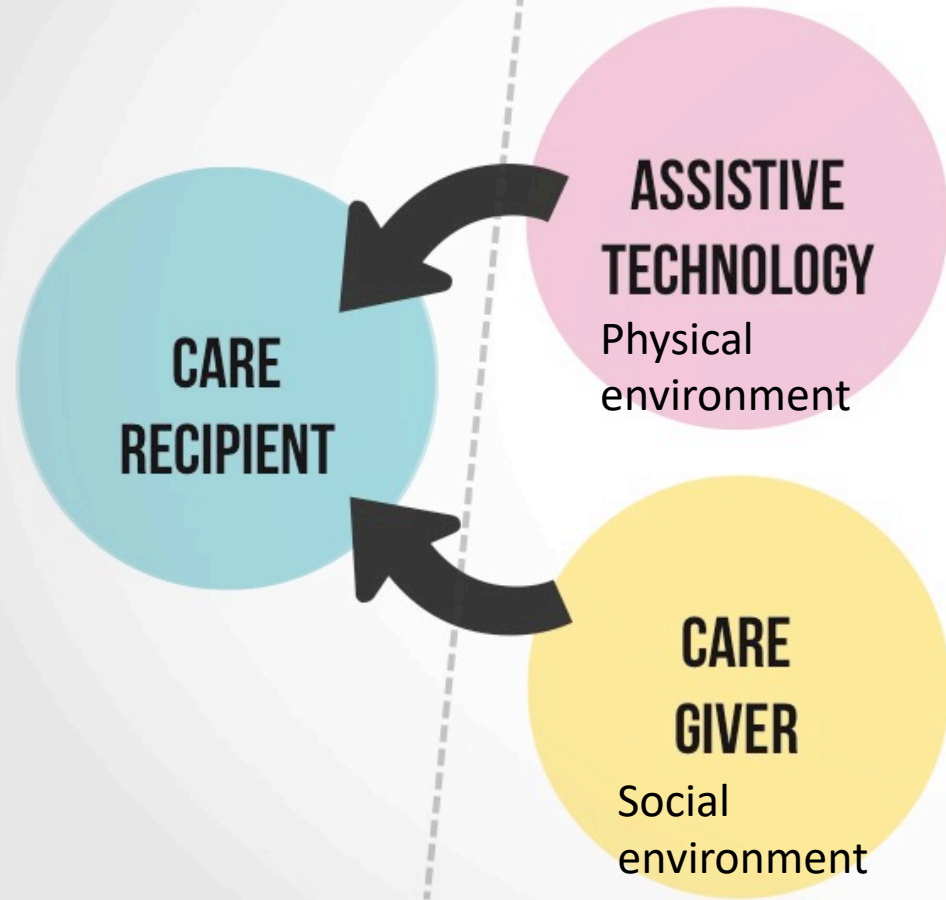
(per 100 workers)





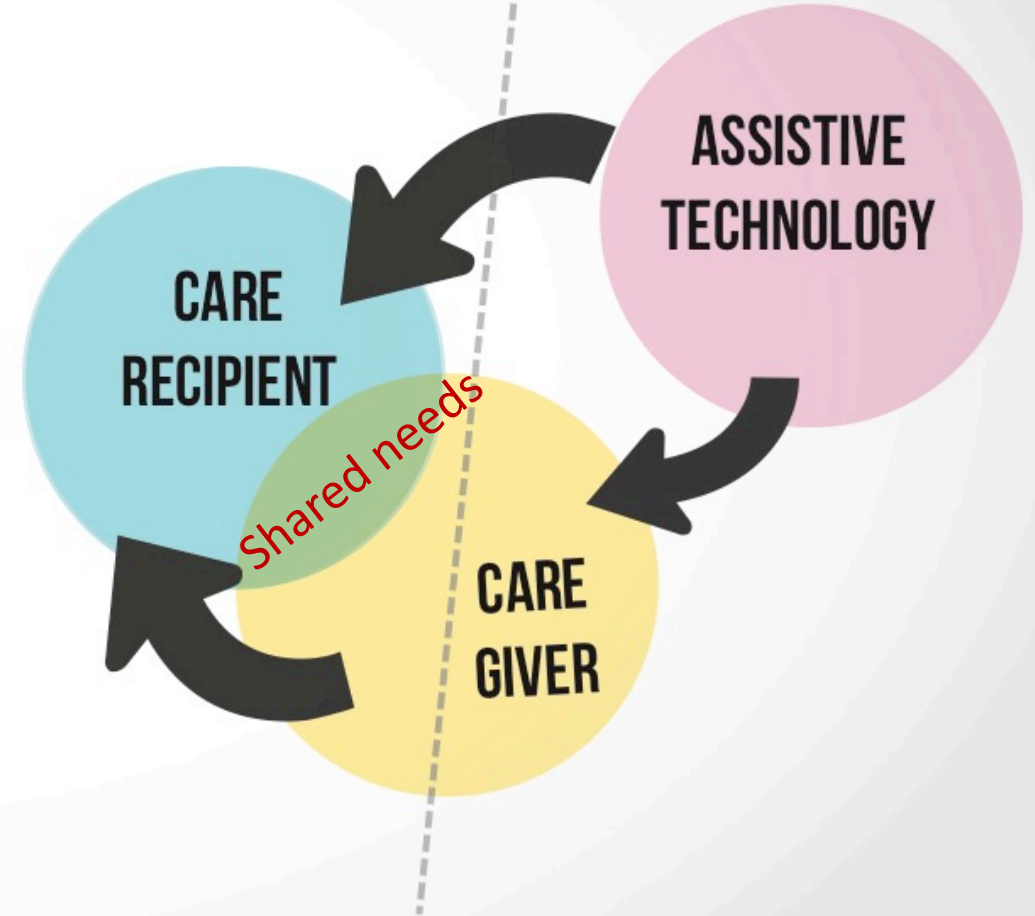
PROBLEM

SOLUTION

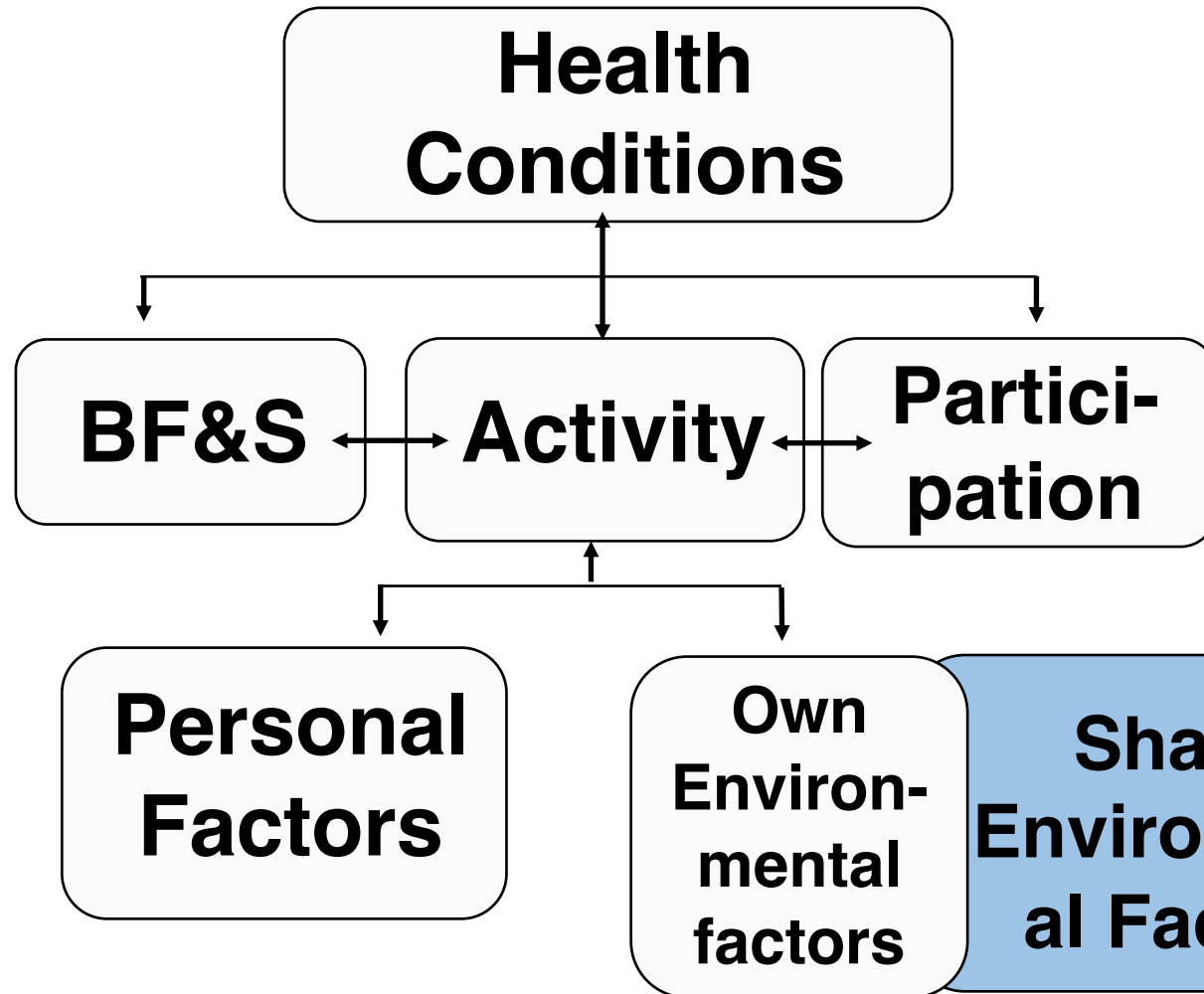


PROBLEM

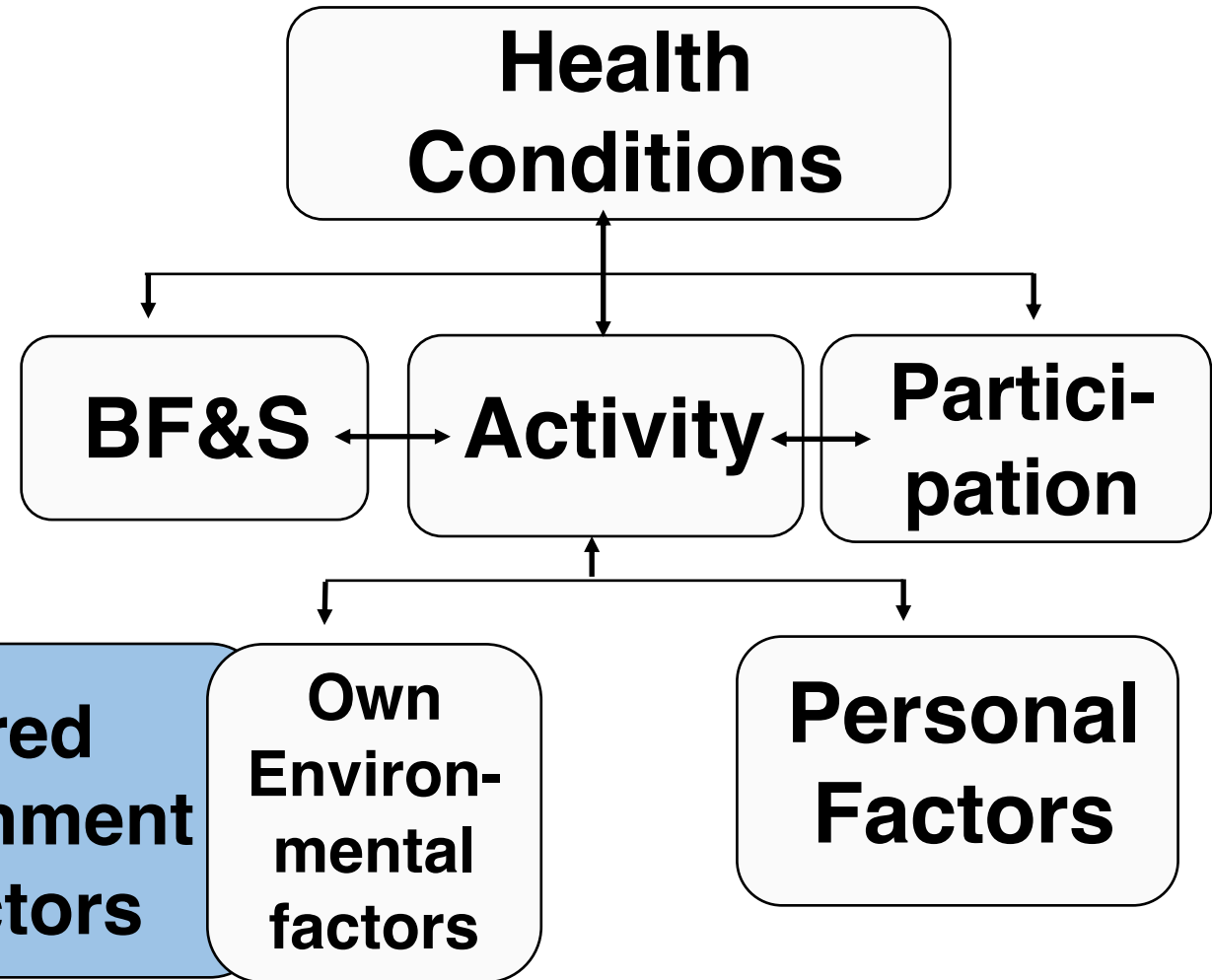
SOLUTION



Caregiver



Care recipient



PROBLEM #3

No evidence on effectiveness of existing solutions on caregivers/dyad

EVIDENCE FOR ENVIRONMENTAL INTERVENTIONS FOR TOILET TRANSFERS

Author	Intervention
Randomized control trial	
Gitlin et al, 2006	Multicomponent home intervention
Wilson et al., 2009	AT, HM
Petersson et al., 2008	HM
Sanford et al., 2006	AT, EM
Mann et al., 1999	AT,EM
Quasi-experimental single group	
Gitlin, Miller, Boyce, 1999	OT bathroom modification
Stark, 2009	Tailored HM
Fange & Iwarsson, 2005	OT HM

***defined as “with the exclusion of supportive person”.**

FIM motor score range: 13-91

Authors (Year), Study type	Interven tion	Outcome measure	Population (N)	Mean FIM Motor Score(SD) Baseline	Mean FIM Motor Score(SD): Post
Mann et al (1999), RCT	AT, EM	Maintaining independence* Home care costs reduction	Frail elderly (104)	74.1(14.2) 5.7	71.5(16.2) 18 months
Wilson et al (2009), RCT	AT, EM	Functional decline	People aging with disability (91)	78.5(13.0) 6.03	79.2(12.1) 12 months 77.1(13.4) 24 months
Sanford & Griffiths, RCT	AT, EM	Caregiving outcomes (safety, physical burden) Self-efficacy and subjective well-being	Aging veterans AND family caregiver (100+)	Toilet transfer FIM: 1-5	

PROBLEM #4

Functional solutions are often not compatible
with or integrated into the context of use
(home)

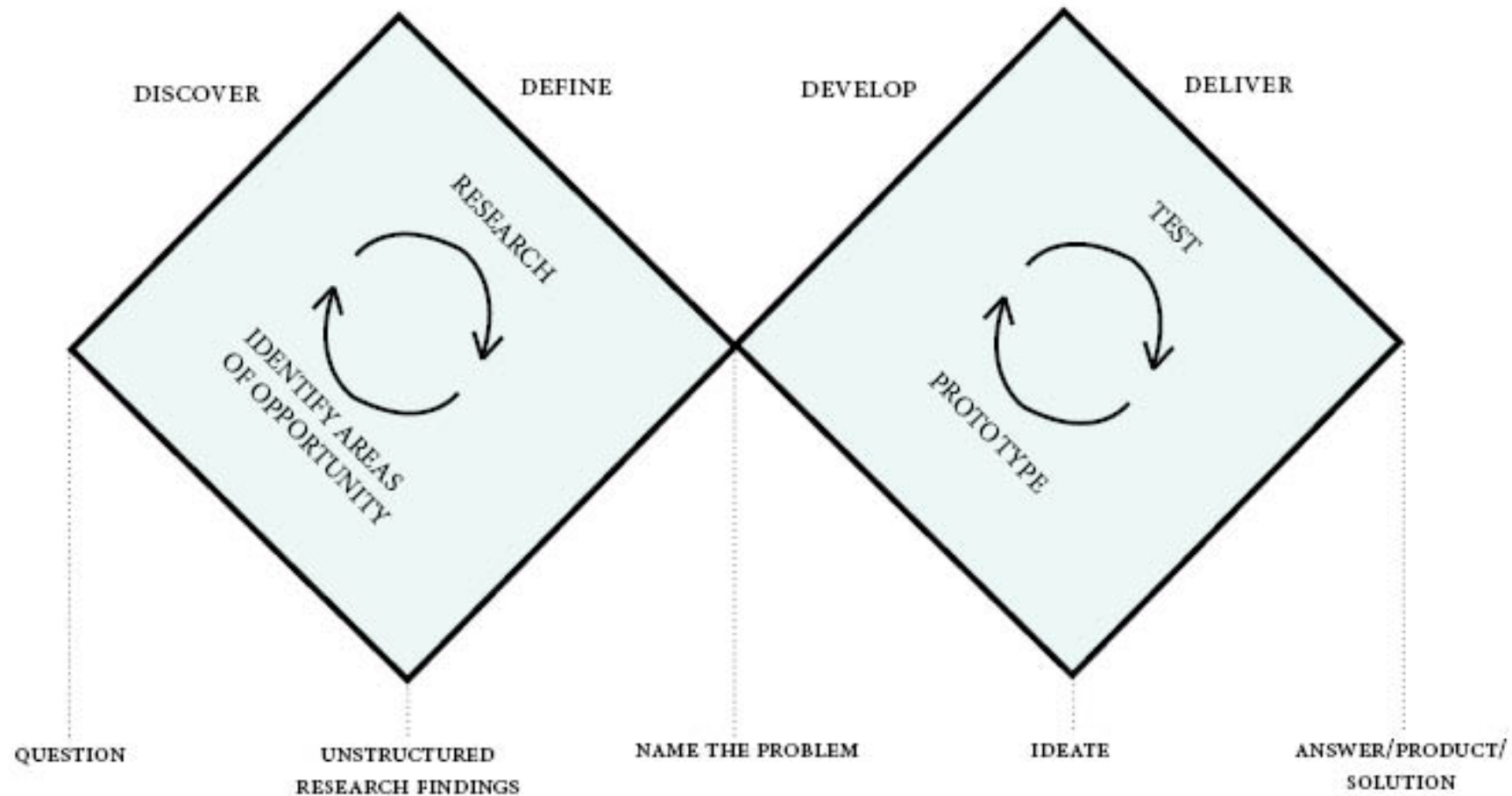


**WHY / HOW DOES
DESIGN PLAY A ROLE?**



DESIGNING THE RIGHT THING

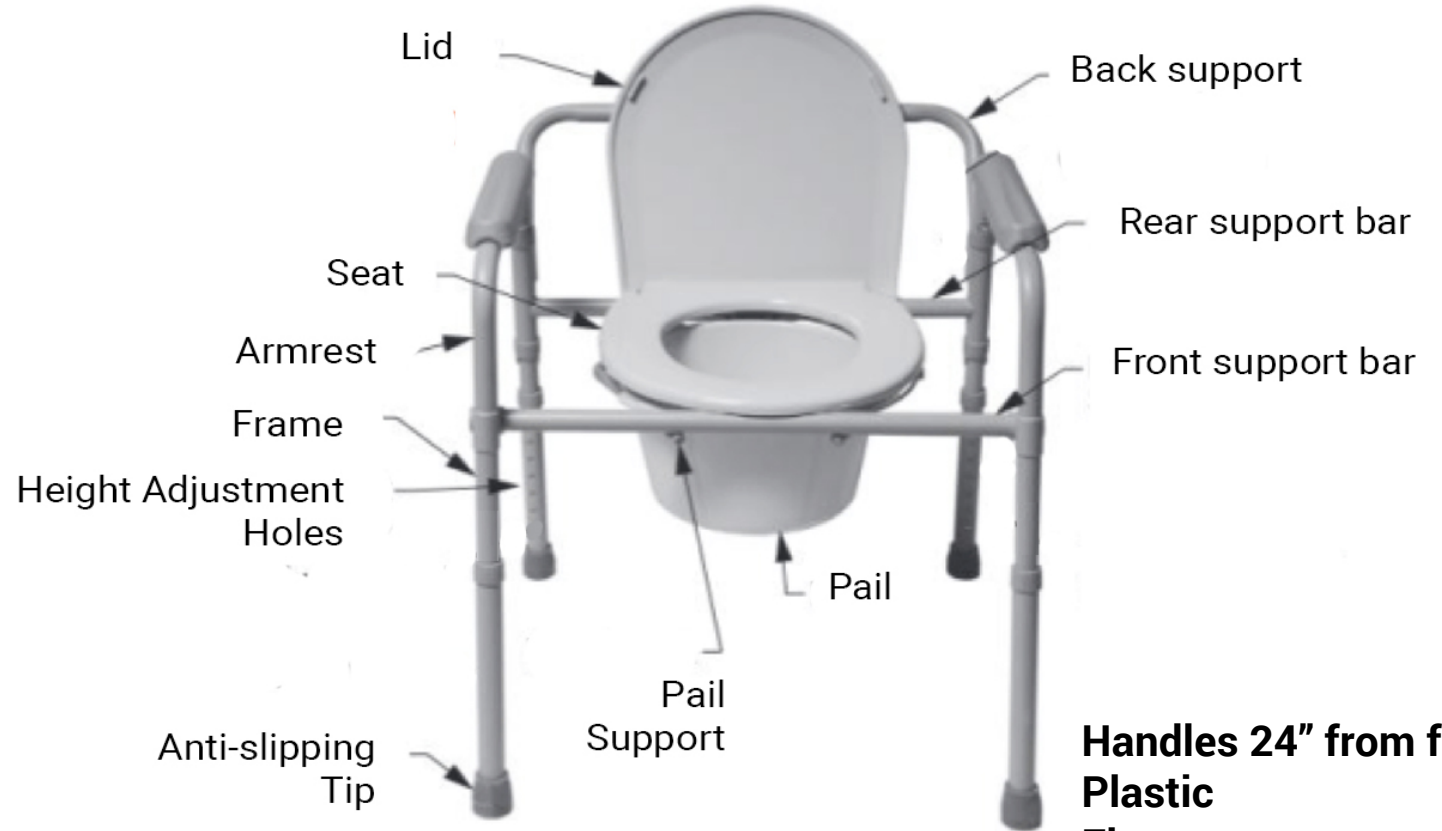
DESIGNING THINGS RIGHT



COMMODE ISN'T A COMMODE ISN'T A COMMODE..

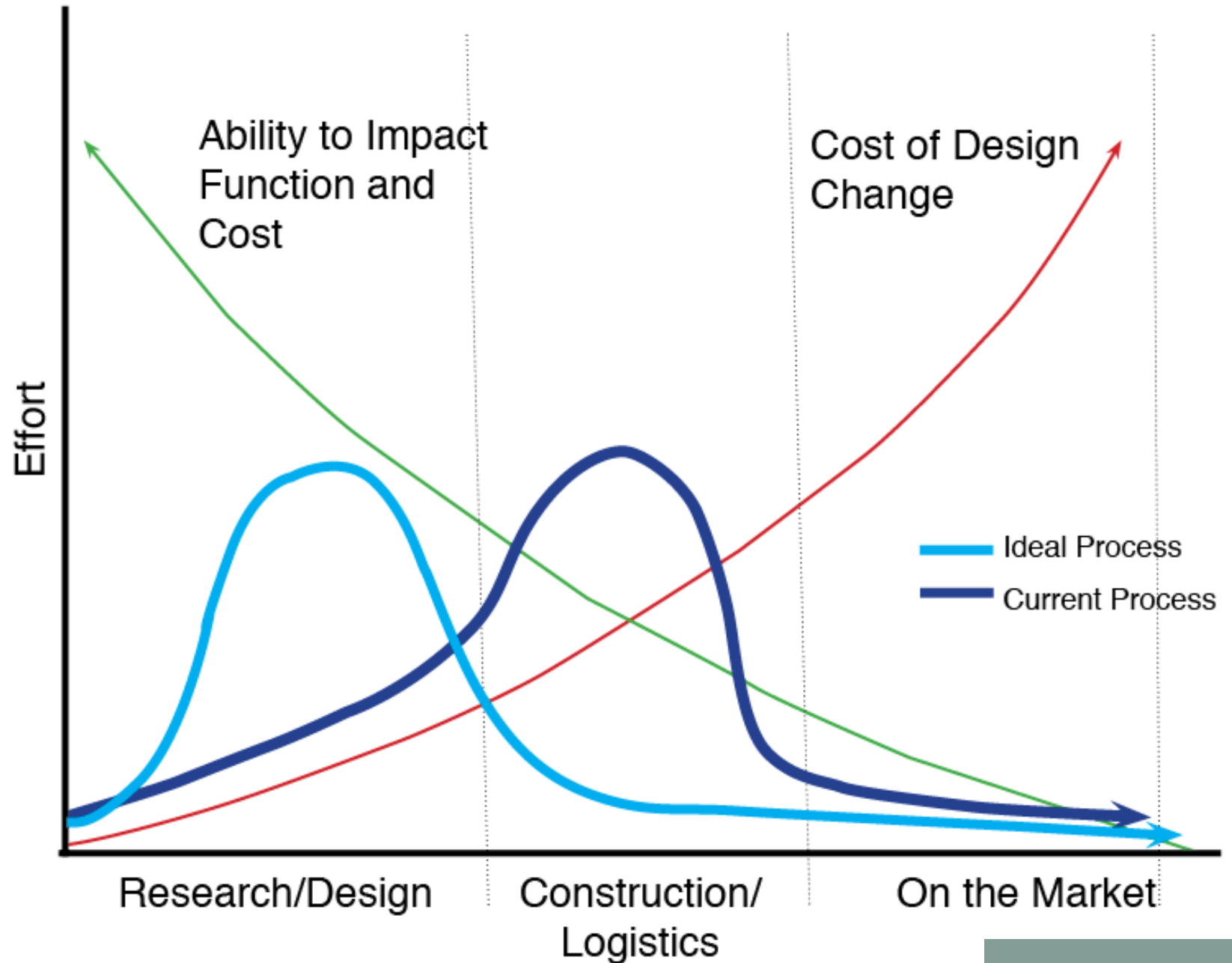


Folding Steel Commode



Handles 24" from floor
Plastic
Flat seat

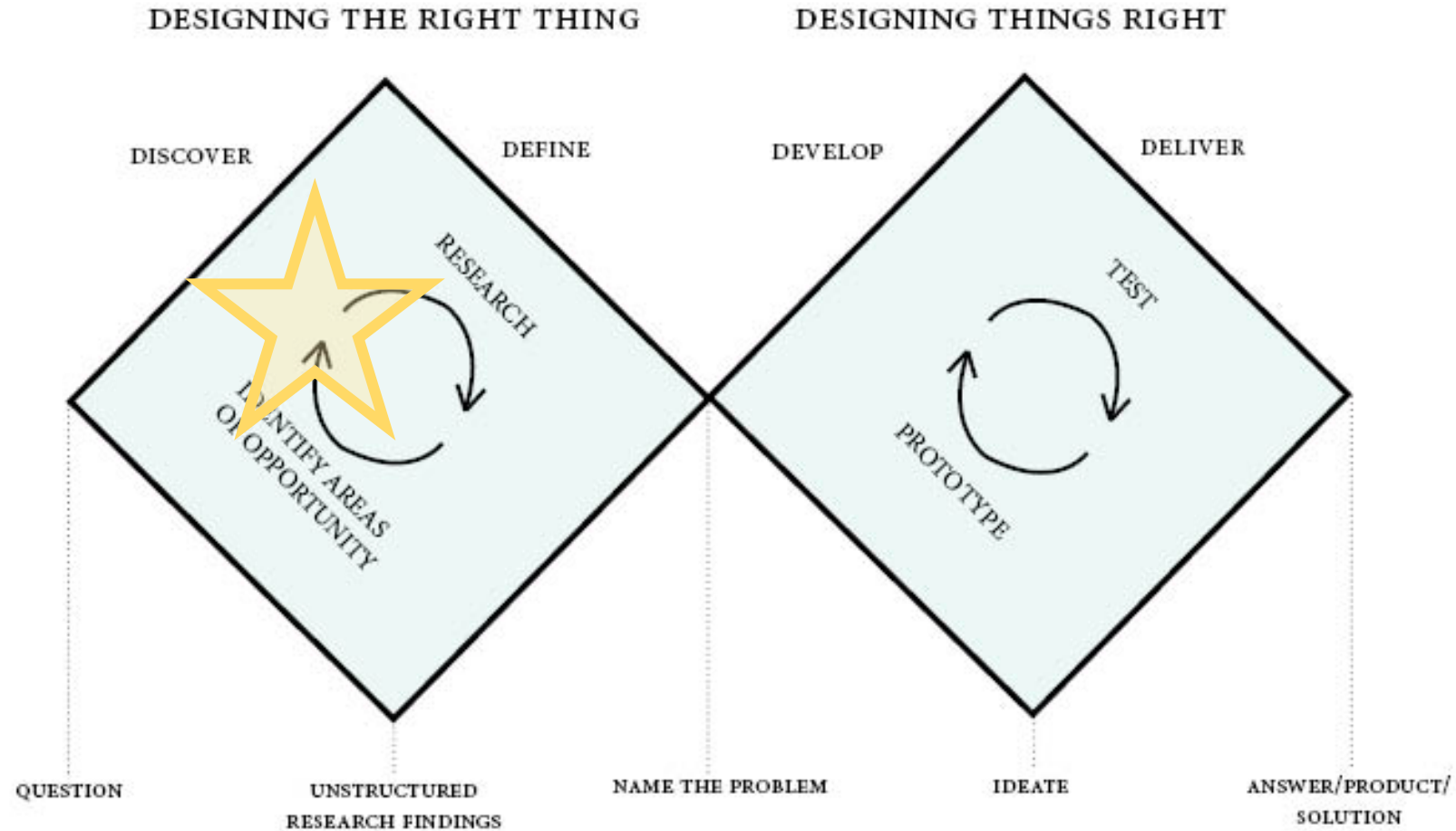
CHALLENGES OF IDEAL DESIGN PROCESS



BARRIERS TO DEVELOPING BETTER TOOLS




WE ARE HERE





DEVELOPING A METHODOLOGY TO DOCUMENT AND ASSESS:

- 1) Features of a product/environment
 - 2) Users' interaction with features of products and environments to establish capability demands placed upon the user
 - 3) Effect of environment on performance
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HOW WE'RE COLLECTING INFORMATION



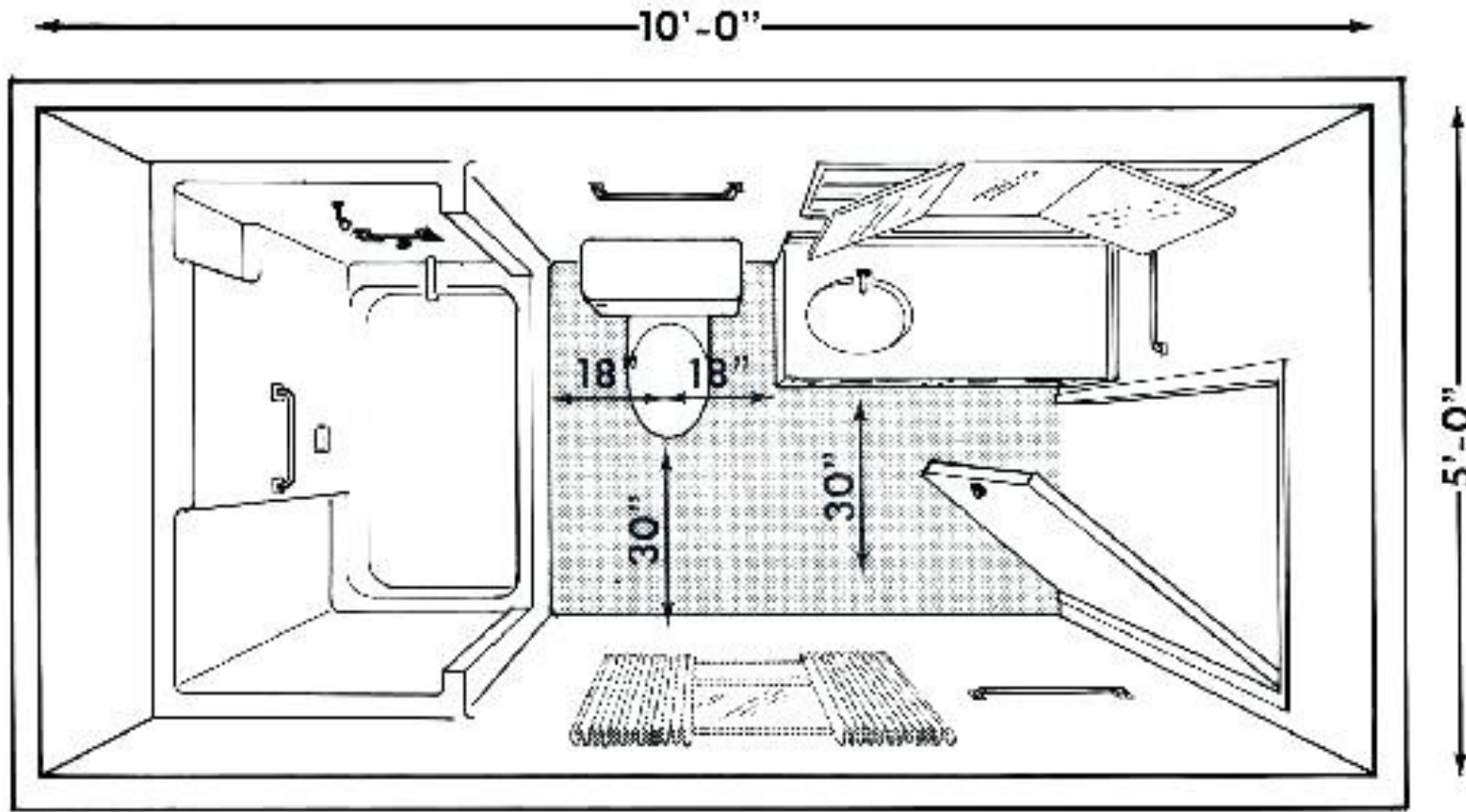
amazon.com

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UNITED STATES
PATENT AND TRADEMARK OFFICE

uspto

HOW DO THEY INTERACT WITH THE ENVIRONMENT?



Interaction with
space and other
objects around

Interaction with
user ability

HEARD FROM THE COMMUNITY

- Products recommended on just one thread for ALS caregivers:
 - Hoyer Lift (3 ft of clearance around toilet)
 - Lift to shower chair with cut-out that can roll over toilet
 - Overhead Lift
 - Freestanding Lift
 - Sit-to-stand Lift
 - Handheld Urinal
 - Bedside Commode
 - Hygiene Sling

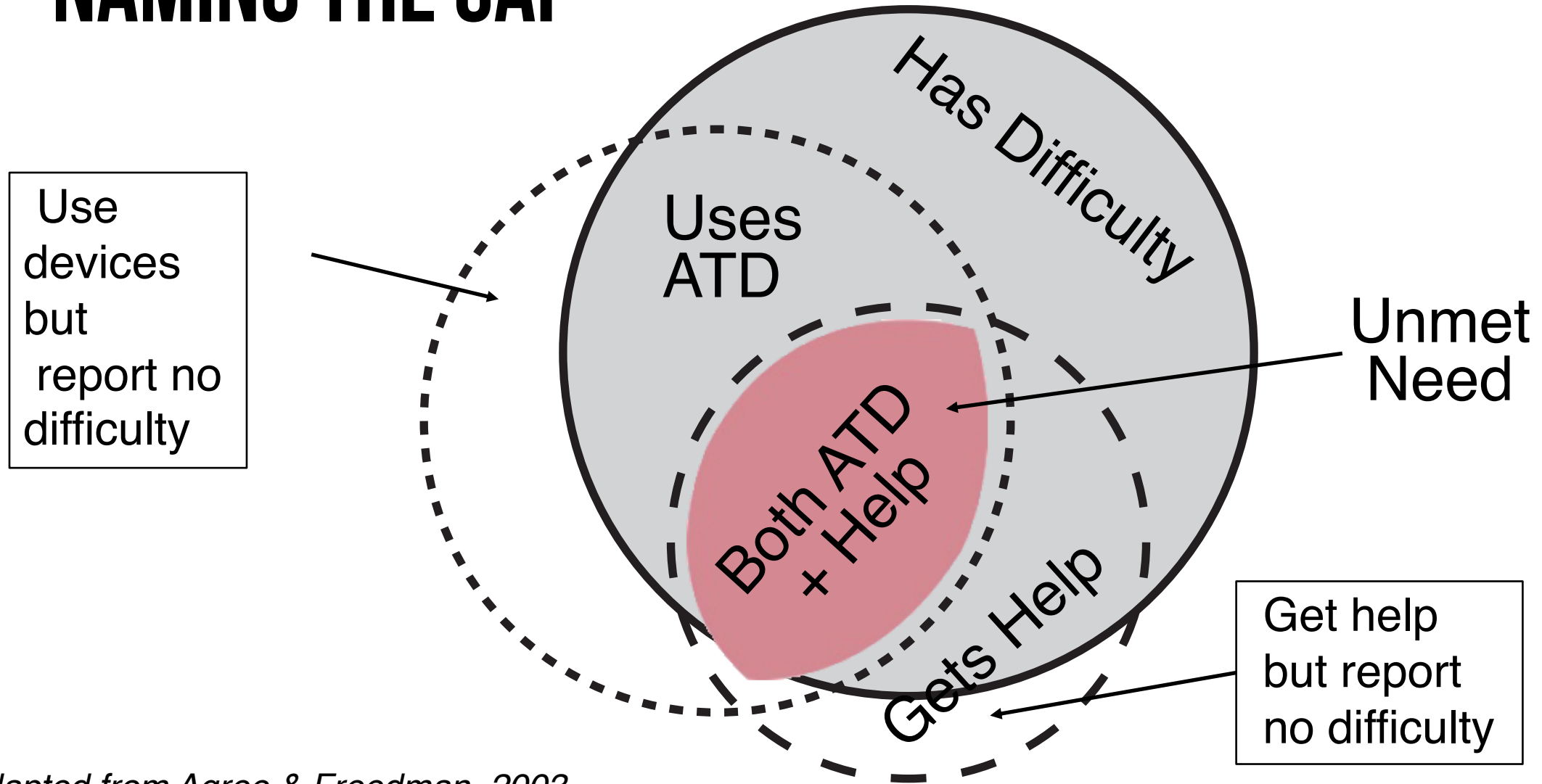
WHY IS IT IMPORTANT TO DESIGN FOR THE RIGHT AUDIENCE?



SMALL DESIGN CHANGES, BIG DIFFERENCES

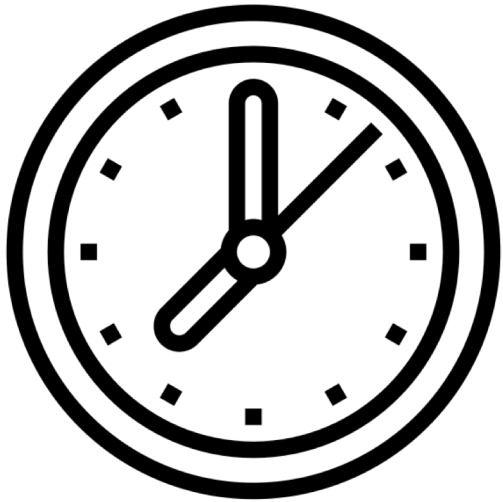


NAMING THE GAP



Adapted from Agree & Freedman, 2003

HOW DO PEOPLE CHOOSE?



“not disabled enough”

And end up using beyond its point
of max. utility

WHAT OTHER FACTORS PLAY INTO WHAT PEOPLE CHOOSE?



A FEW WAYS PRODUCTS AVAILABLE FALL SHORT

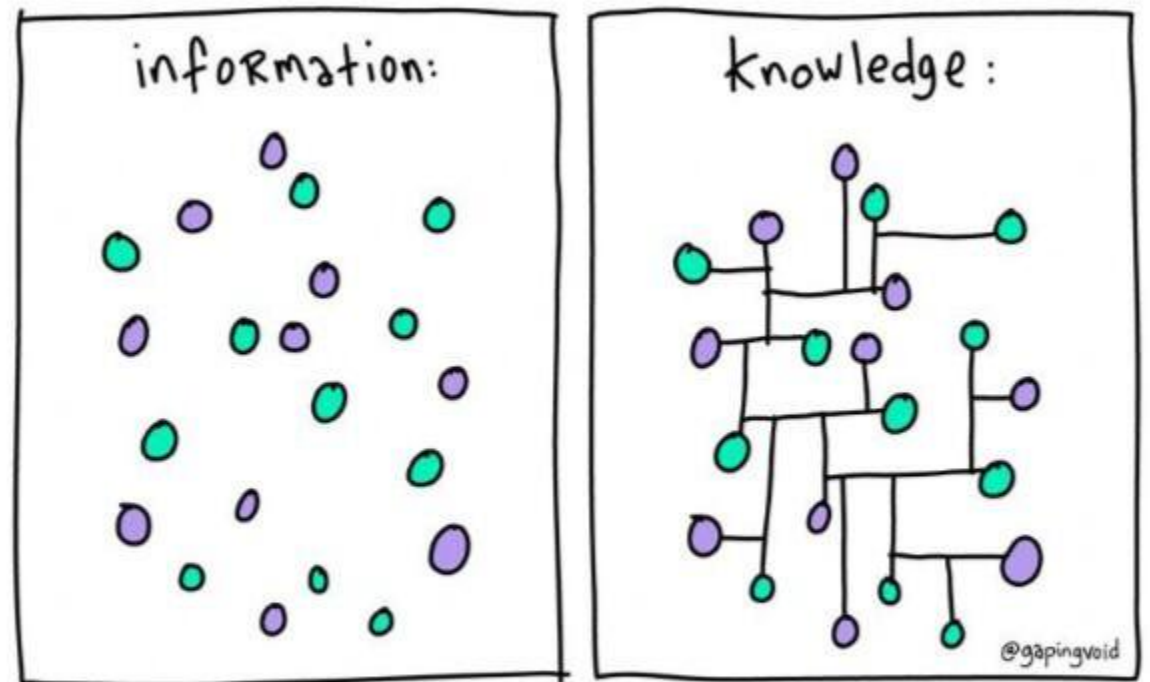


YOU ARE SUBJECT-MATTER EXPERTS!

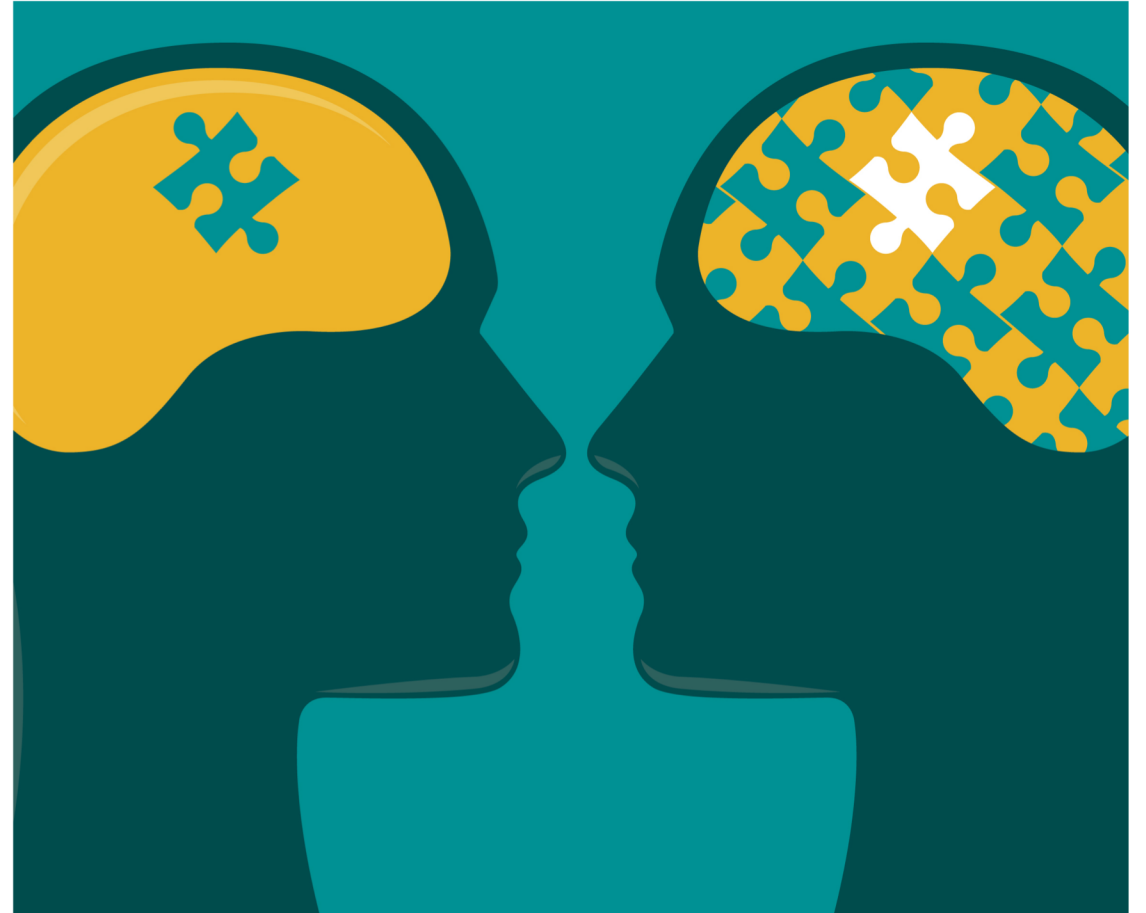
OT "owns" toileting

Enhancing and enabling participation in habits, routines

Highly personal; functional, necessary, and meaningful activity



WE WANT YOUR THOUGHTS!



THANK YOU

LET'S STAY IN TOUCH!

Susan Lee

(404)385-2632

su.lee@design.gatech.edu

Evan Fowler

evanrosefowler@gatech.edu