

U3A Presentation

Part 1: Balance, Falls and Fear of Falling

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My Background

- Undergraduate degree in Psychology
- PhD in Rehabilitation Psychology (Brunel University) exploring how fear of falling reduces safety whilst walking in older people
- Research Fellow at University of Exeter; working on a project about how anxiety/fear influences balance
- Currently a Sir Henry Wellcome Research Fellow in the Faculty of Medicine, at Imperial College London; investigating dizziness in older people

Structure for my talk

1. Presentation of my recent research investigating how fear of falling can influence balance and safety (~35 minutes)
2. Break for tea/coffee (5-10 minutes)
3. Present more general tips for reducing risk of falls (~15 minutes)
4. Extensive question and answer session (~30 minutes)

Fear of Falling: A Primer

- Highly common:
 - Experienced by up to 50% of older adults
 - High levels also reported by people with Parkinson's Disease and who have experienced strokes
- It associated with a variety of negative outcomes:
 - Activity avoidance --> deconditioning
 - Increase risk for future falls

Fear of Falling: Causes

What causes fear of falling?

1. The perception that balance is threatened



Fear of Falling: Causes

What causes fear of falling?

1. The perception that balance is threatened

AND

2. The belief that harm (ie, a fall) is likely to occur

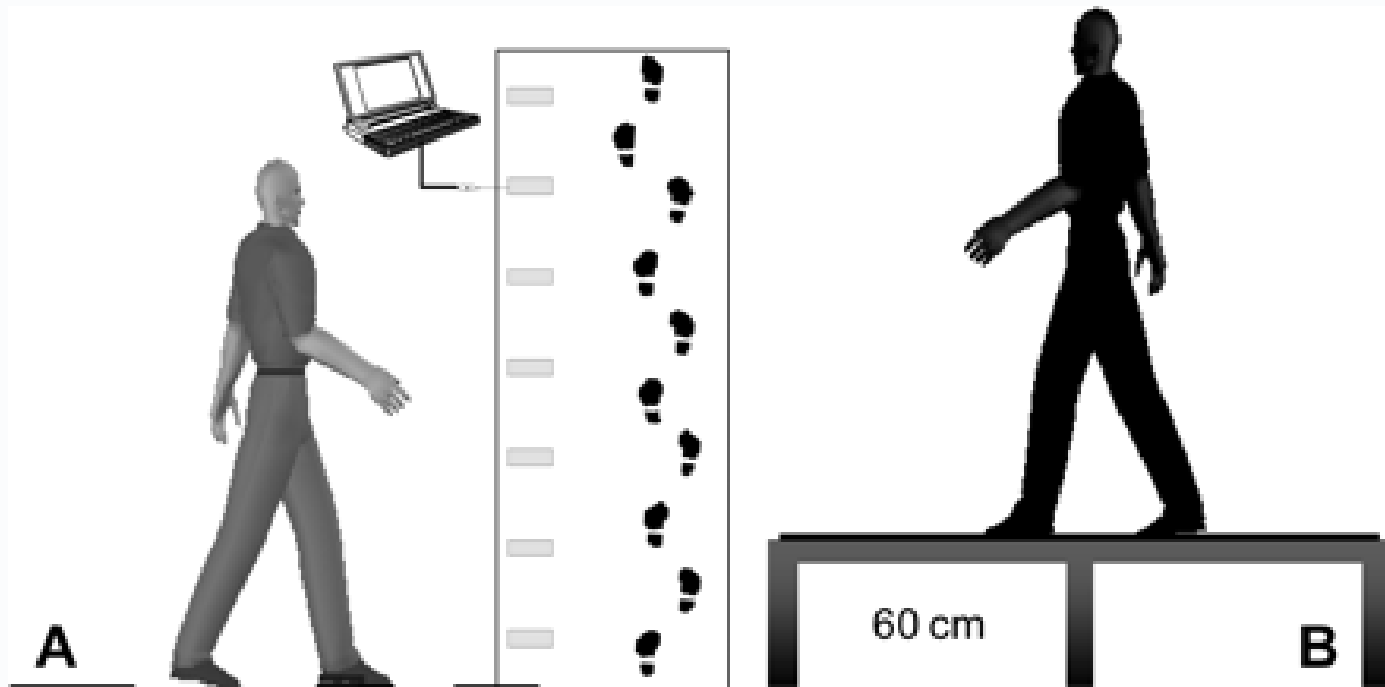
What makes fear of falling more likely?

- A previous fall – or ‘near miss’
- Recognition of balance limitations
- Vicarious experience (witnessing friends or family members having fallen)

Fear of Falling and Gait

'Fearful' gait is...

- More 'cautious' – reduced speed, widened base of support, shorter steps



Fear of Falling and Gait

'Fearful' gait is...

- More 'cautious' – reduced speed, widened base of support, shorter steps
- Stiffer and less fluid – reduced joint movement and increased co-contraction of lower leg muscles
- Energetically-demanding

BUT ARE THESE CHANGES PROTECTIVE OR MALADAPTIVE???

Fear of Falling and Gait

- Fear of falling may not be inherently detrimental to safety – as long as it is proportionate to the threat faced
- Fear of falling may even have a **protective effect**
- Some level of fear may *enhance* safety when balance is challenged or threatened

Problems arise when...

- The gait adaptations are excessive/unsuitable for the current context (i.e., ‘overly-cautious’ gait)
- Fear triggers unhelpful cognitive responses (e.g., worrisome thoughts and panic)
- Fear leads to excessive activity avoidance

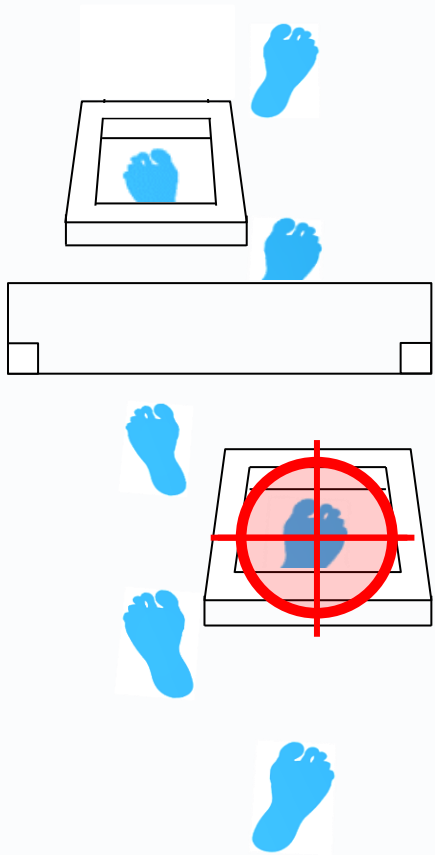
My Previous Research

- *How does fear of falling reduce safety whilst walking?*
- Where we look when we walk is very important!
- We use vision in a number of ways:
 - looking ahead to both detect possible trip hazards and plan future stepping actions
 - to control (and guide) the ongoing step, e.g., when stepping onto a curb

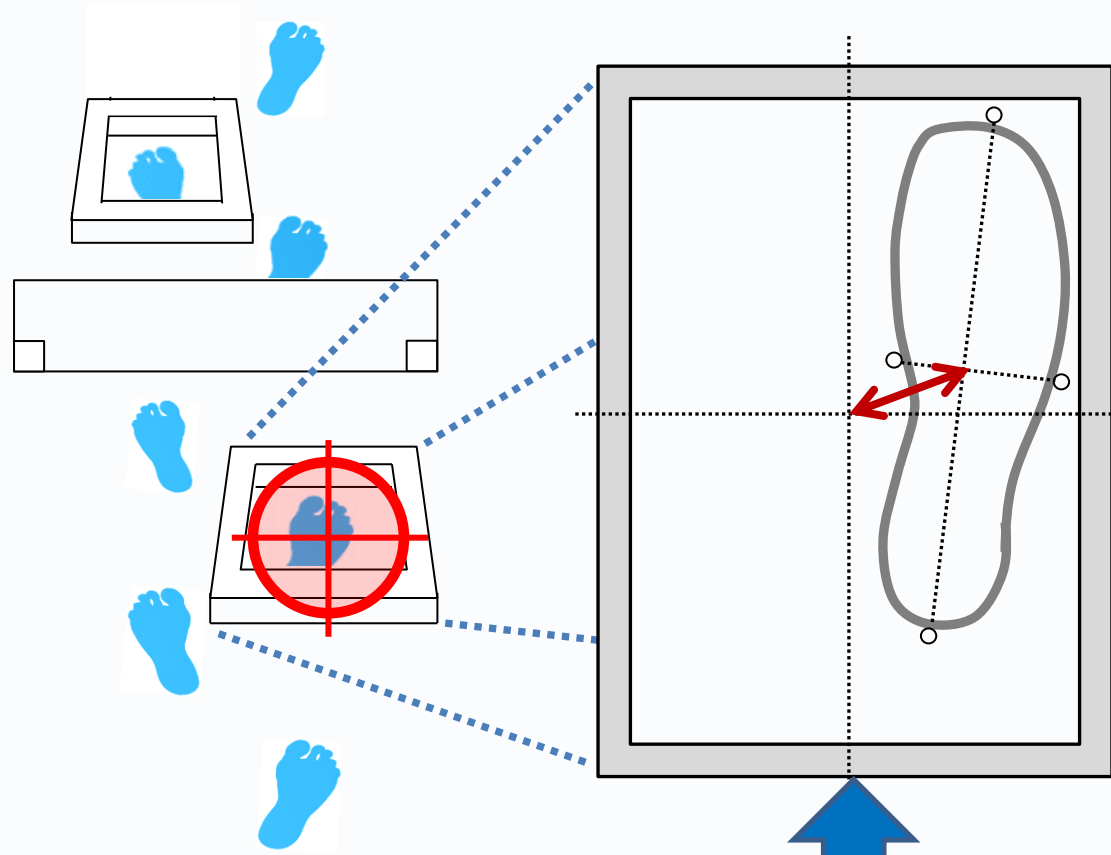
My Previous Research

- How does fear of falling alter visual search when walking?





Low fear of falling



High fear of falling

Foot placement error





Main Findings

- People who were fearful of falling looked ahead less – instead looking directly at the ground in front of them
- This led to reduced stepping accuracy and increased tripping
- **Main take-home message?**
 - Make sure you also take time to look ahead when walking!
 - It is OK to pause and do this if necessary
 - Looking down towards your feet is often necessary. But **only** doing this may reduce safety

Useful Tips #1

- If you feel yourself becoming anxious or worried about falling when out-and-about, consider these tips:
 - Take a few moments to relax
 - Take a few deep breaths and then plan how you can safely continue on with your task
 - Consider participating in community exercise/balance classes to increase your confidence

Useful Tips #2

- If you feel yourself avoiding activities and staying at home because you are anxious or worried about falling, consider these tips:
 - Start small: Choose an 'easy' place to walk to, to slowly start building your confidence up
 - Set '**SMART**' goals (specific, measurable, achievable, relevant, time-bound)
 - Adopt strategies that increase your confidence **before** going out (e.g., wear shoes with good grip, use walking poles, etc.)
 - Consider participating in community exercise/balance classes to increase your confidence

Linking these findings to COVID

- This work shows the importance of using vision proactively when walking – to plan future actions
- However, we do also need to occasionally look down towards our feet to ensure safety – particularly when stepping over an obstacle or walking up/down stairs
- How is this relevant for COVID?

Linking these findings to COVID



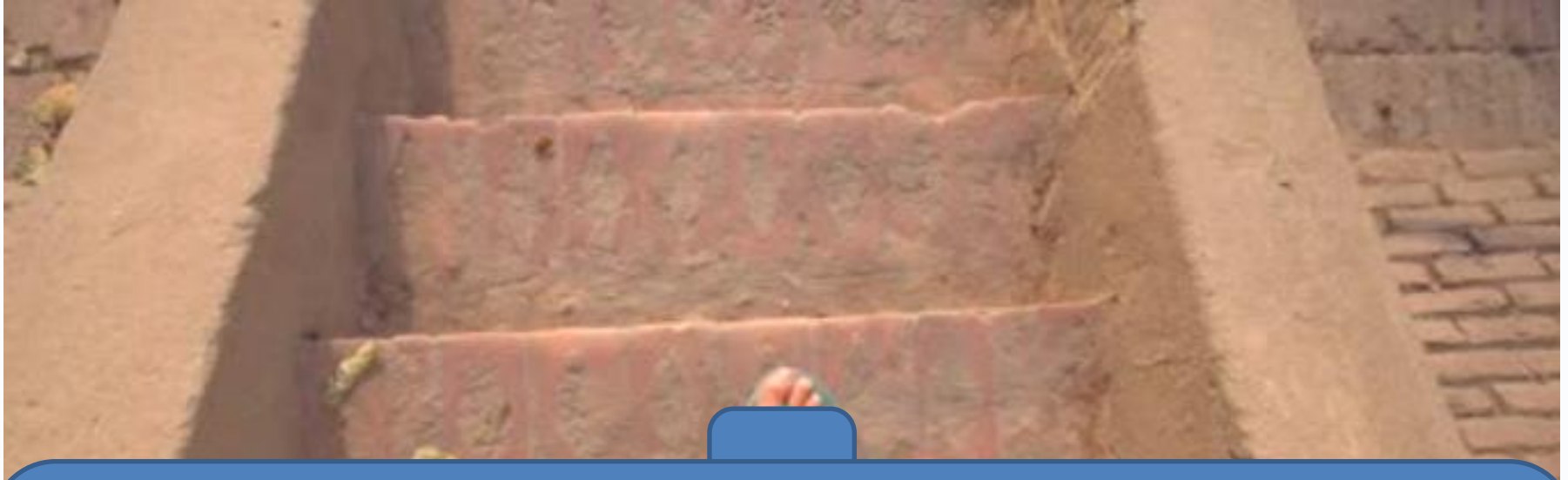
Linking these findings to COVID



Linking these findings to COVID



Linking these findings to COVID



Main Findings

- Wearing a face mask will invariably block portion of our visual field; specifically lower peripheral vision
- This aspect of vision is used to guide stepping (so that we can guide stepping without having to explicitly look down)
- **Masks are important for overall safety!** But take these steps to ensure that they do not affect balance:
 - Slow down! This will make it easier to regain balance if we trip
 - Pause to plan ahead and detect any obstacles/trip hazards
 - Look down at your feet if stepping accurately is crucial

Linking these findings to COVID



Current Research

- Aims to explore risk factors for dizziness in older people
- The term 'dizziness' can describe a range of sensations, including:
 - A false sense of motion or spinning (vertigo)
 - Light-headedness or feeling faint
 - Unsteadiness or imbalance
 - A feeling of floating, wooziness or heavy-headedness

Dizziness in Older Adults: A Primer

- Dizziness is highly common in older adults:
 - Experienced by up to 30% of adults aged 60 years and above
 - Increases with age
 - Experienced by around 50% of those aged 85+
- It associated with a variety of negative outcomes:
 - A 12-fold increase in risk of falling
 - Increased risk of injurious falls
 - Activity avoidance, social isolation and loss of independence
 - Reduced quality of life

Impact of Dizziness in Older Adults

- *“It's changed my life. It's making me very depressed because I can't do anything”*
- *“I feel like I am a hermit now. I stay in the house, which I never did before”*
- *“I don't go out as much as far as to social events, or anything like that. I do not do that anymore”*
- *I used to shop and do everything for myself ... Now [my daughter] does everything for me”*

Dizziness: Commons Causes

1. Dislodging of crystals within the inner ear: Easy to identify and just as easy to treat!
2. Blood pressure: Easy to identify and just as easy to treat!
3. Medication: Easy to identify and just as easy to treat!
4. Anxiety/fear of falling: Slightly harder to identify and treat, but earlier tips can have some positive effect

Recommendations for Dizziness

- Dizziness is not a 'normal part of ageing'
- If you find yourself regularly experiencing dizziness – tell your GP
- Key thing is to clearly describe the symptoms you experience (e.g., spinning or imbalance?) and the situations that trigger it (e.g., rolling over in bed vs. standing up from a chair?)
- Most of the common causes of dizziness in older people can be easily treated

TIME FOR A BREAK!



Part 2: General Tips for Improving Balance and Avoiding Falls

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Balance: A Complex Problem



Balance: A Complex Problem



Ears and Eyes

Recommendations:

- Get your eyes checked regularly (every 2 years) and ensure you have the correct prescription in your glasses
- Be cautious when using varifocals
- If your vision becomes blurry/clouded and/or you suspect you are developing cataracts, speak to your GP
- Similarly, if your hearing starts to deteriorate, speak to your GP – excessive wax build up or hearing loss can both lead to falls (and are both easily treated)

Strength & Balance

Recommendations:

- Stay active! -> Regular walks are one of the easiest ways to maintain strength and mobility
- Attend organised exercise classes
- Perform regular balance training at home (Google “NHS balance exercises”) such as:
 - stand-up-and-sit-down 5 times every hour
 - practice standing on one leg (with something nearby to hold onto), and time yourself
 - practice standing on your tip-toes (once again with something to hold onto)

Other Practical Recommendations

- Make your home ‘fall-proof’!
 - Remove rugs/mats at the top and bottom of stairs
 - Install a light near your bed so you can easily turn this on and see where you are going in the night
 - Remove trip hazards (wires, rugs etc.) and avoid glass furniture if you can
- Make sure you stay hydrated and eat regular meals – as both of these can avoid you becoming light headed and falling

Thank you for listening!

Happy to take any questions/points for discussion!

(Feel free to also email me: t.ellmers@imperial.ac.uk)