



**'I never felt this tired before'**

**Fatigue- is there anything clinicians can do?**



# Stroke survivors

*UK Stroke Association*

In a national survey of unmet needs after stroke,  
**43%** reported that they had inadequate support to manage their fatigue.

*McKevitt et al. 2011*

*James Lind Alliance*

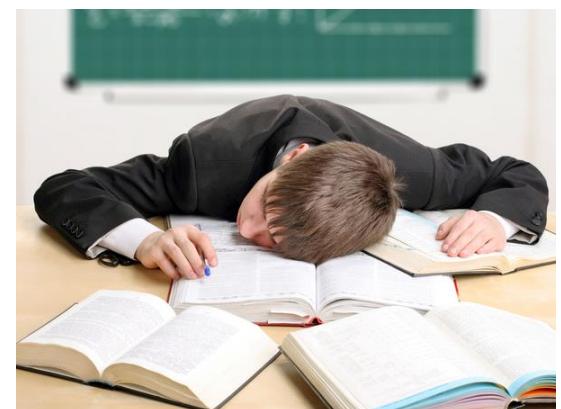
Fatigue listed in **top ten** research priorities relating to life after stroke

*Pollock et al. 2012*

‘Top 10 research priorities relating to stroke nursing: a rigorous approach to establish a national nurse-led research agenda’

*Rowat et al. 2016*

First - What are the best ways to manage/prevent fatigue?





# Previous research







**TRUE  
OR  
FALSE**



## True or False?

- The incidence of fatigue after stroke is approximately 50%
- Fatigue is linked to increased mortality
- Fatigue is linked to site of stroke lesion
- More females than males report fatigue after stroke
- Fatigue may be defined as 'weariness or extreme tiredness and can be both physical and mental'
- Taking statins is linked to post stroke fatigue
- There is a direct link between depression and fatigue.
- Fatigue commonly begins shortly after stroke and is likely to resolve within the first four months post stroke.
- Post stroke is different to fatigue reported in other conditions.
- ‘Pacing’ is used widely but is not supported by research evidence.



# Facts

- Common- although disagreement over numbers (23%-75%) Choi-Kwon & Kim, 2011
- 50% cited largest recent review Hinkle et al, 2017



# Facts

- Associated with poor functional outcome  
*Ingles et al. 1999; Glader et al. 2002*
  
- Increased mortality  
*Glader et al. 2002*

# What is fatigue?

*'Feeling of weariness, unrelated to previous exertion, which is not ameliorated by rest.'*

Characteristics;

- chronic lack of energy, aversion to effort
- unrelated to previous exertion levels
- not ameliorated by rest



De Groot *et al.* 2003



- Study of influence of medication on fatigue 6m after stroke.
- PSF increased with polypharmacy
- Not association with medication use

Ponchel *et al.* 2016



# Relationship with depression



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A systematic review of longitudinal studies suggests that fatigue can persist in excess of 36 months post-stroke for some.

Duncan *et al.* 2012



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Characteristics;

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De Groot *et al.* 2003



# What does it feel like?

I never felt this tired.  
Never felt tired like  
this before.

It feels as though  
I've hit a brick  
wall.

Like, you know, a coil, it  
sort of winds down and  
then there's no further  
energy left for movement.

Thinking about what  
I'm actually going to  
say and what I'm  
actually saying, that's  
what makes me tired  
as well.



# “How does it affect you?”

It cramps your lifestyle,  
‘cause it cuts out a chunk  
of the useable day and  
that’s annoying and  
frustrating.

I avoid shopping,  
especially food  
shopping... I find  
going round the  
shops exhausting.



# “How does it affect you?”

It cramps your lifestyle,  
‘cause it cuts out a chunk  
of the useable day and  
that’s annoying and  
frustrating.

It was my grandson’s  
birthday on Sunday. He was  
four and [there was] a huge  
party... It was fabulous but  
my tiredness spoilt it and that  
was annoying.

I avoid shopping,  
especially food  
shopping... I find  
going round the  
shops exhausting.

It’s just a general  
lack of how I was,  
how I think I used to  
be.

# Have you spoken to anyone about it?

I don't think anyone has spoken to me about it.

I got this leaflet about fatigue after stroke. It made me realise that it's going to last longer than I thought...

Nobody else has mentioned it.

I did mention it to [consultant]. He says, well, that's something that happens and it can take months.

I wouldn't say fatigue has been high on the list... She's never said to me, 'Are you suffering from fatigue?' Her role has been to get my blood pressure down.



# Facts

- Common- although disagreement over numbers (23%-75%) Choi-Kwon & Kim, 2011
- Associated with poor functional outcome Ingles *et al.* 1999; Glader *et al.* 2002
- Increased mortality Glader *et al.* 2002
- One of the most distressing symptoms after stroke van der Werf *et al.* 2001
- Adversely effects rehab Morley *et al.* 2005



Cochrane systematic review found that there was insufficient robust evidence to inform treatment recommendations for PSF

*Wu et al. 2015*

No specific recommendations in national or professional guidelines i.e. NICE, RCP.....or internationally....





# Hinkle et al, 2017

Post stroke fatigue: Emerging evidence and approaches to management. A scientific statement for Health Care Professionals from the American Heart Association.

Stroke 2017: 48; e159-e170



# The NotFast study

## The Nottingham Fatigue After Stroke (NotFast) Study

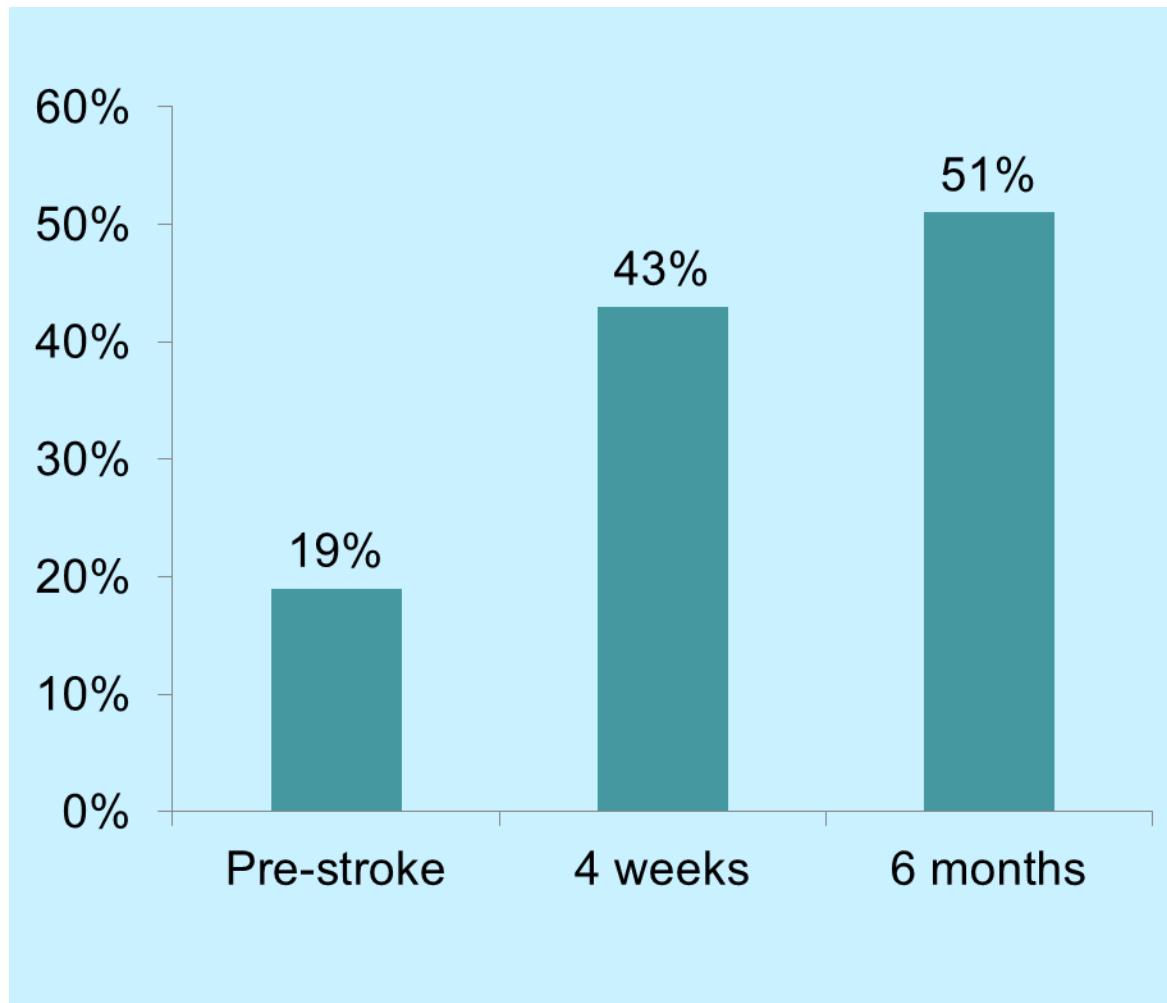
The frequency of fatigue and associated factors in stroke patients without depression.



# Aims of NotFAST

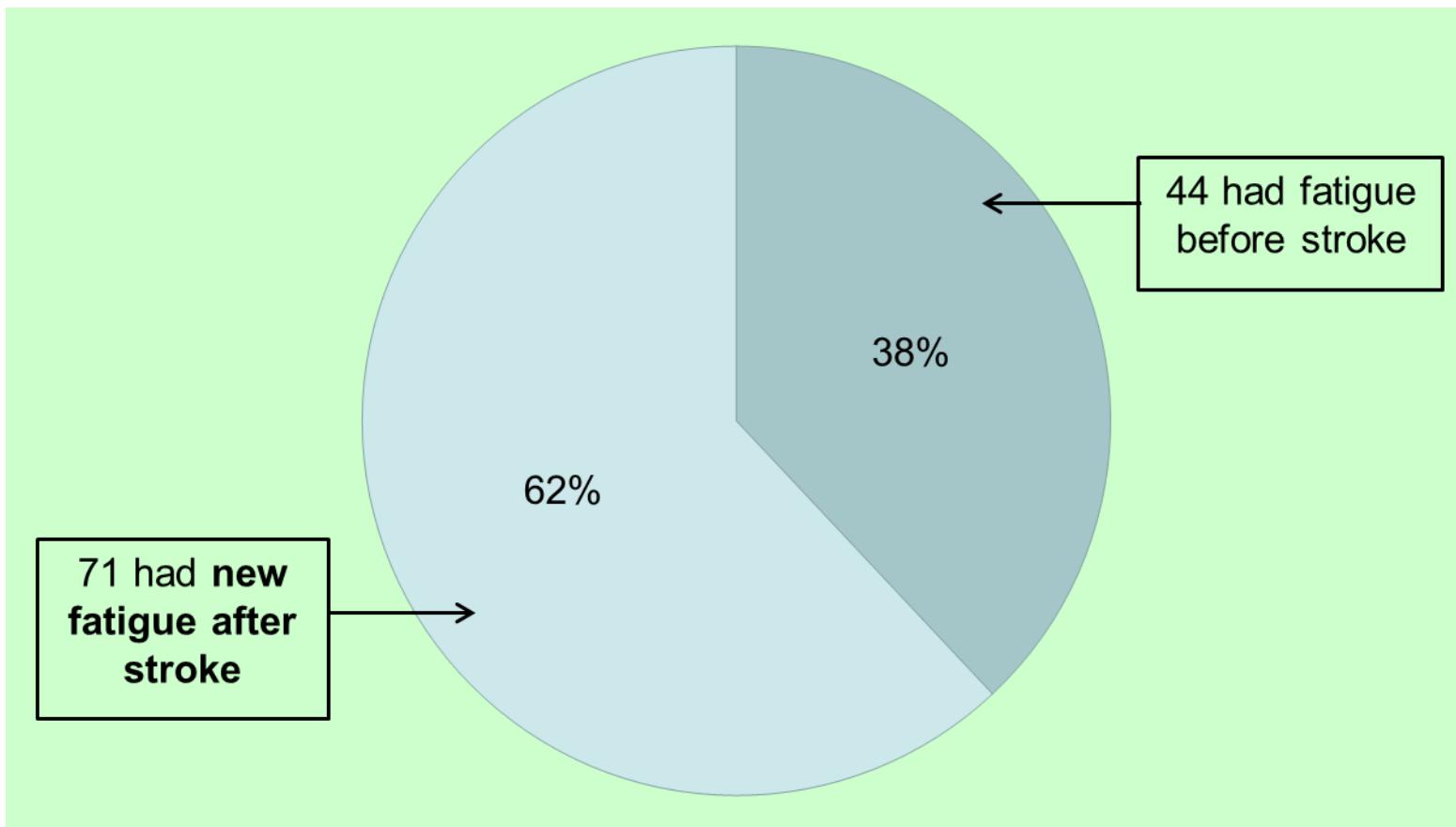
- To investigate the **frequency** of post-stroke fatigue(PSF) in patients **without depression**
- To identify **factors** associated with the development of PSF
- To inform the development of **potential management strategies**

# Frequency of Fatigue



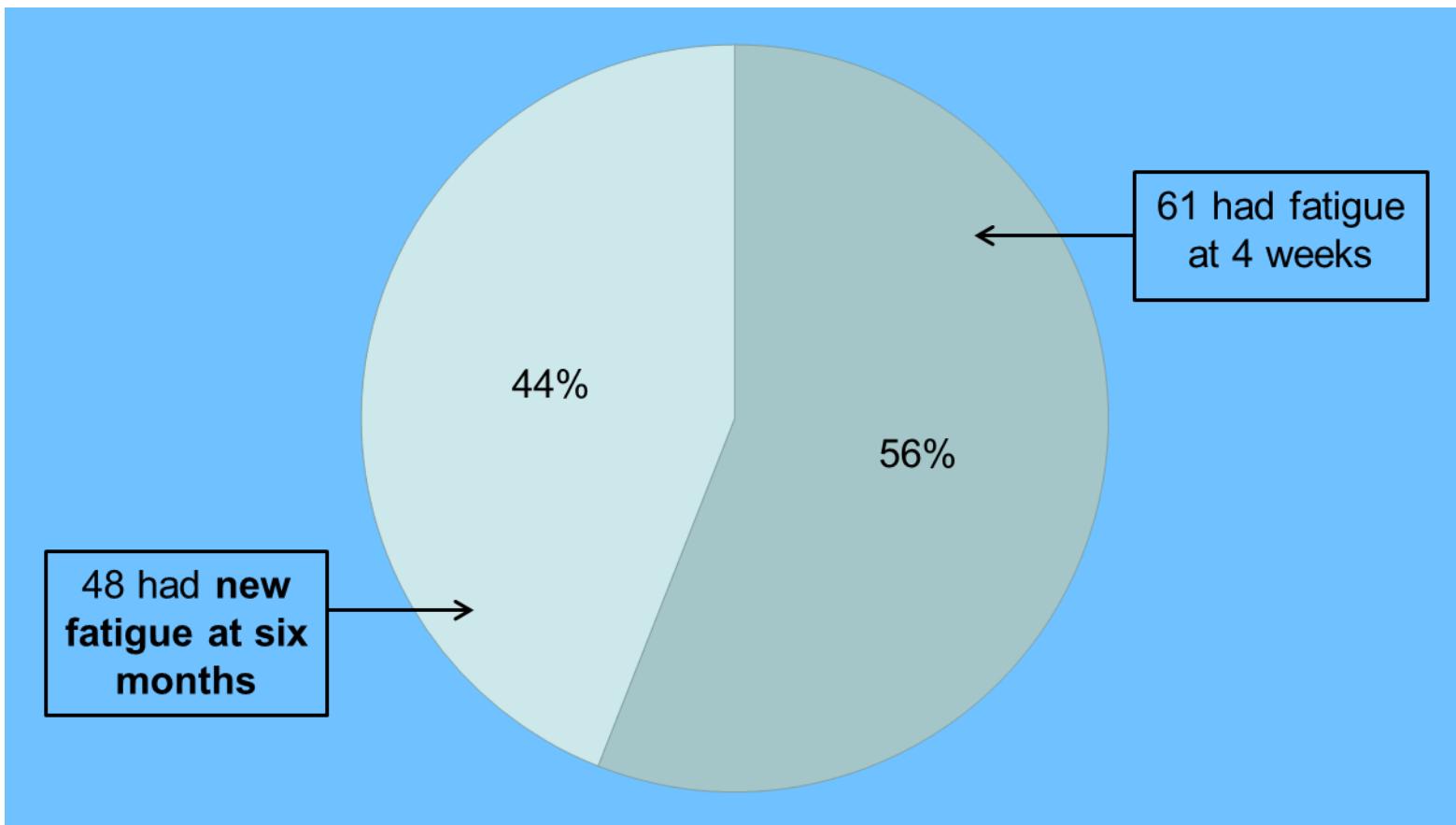
## At 4-6 weeks:

115 out of 268 people fatigued (43%)



At 6 months:

109 out of 213 people fatigued (51%)



# At 4-6 weeks

- Fatigue reported by 115 (43%)
- 71 (62%) reporting this to be a new symptom
- Predictors
  - Self reported pre-stroke fatigue
  - Having spouse/partner
  - Physical functioning
  - Mood





## At 6 months

- Mean FSS scores **significantly higher at 6m** than at 4-6 weeks ( $p=0.002$ )
- Approximately half (n=109, 51%) reported fatigue
- Of those reporting fatigue initially (n=88), 61 (69%) continued to report fatigue
- *De novo* fatigue reported by 48 (38%) of those not fatigued initially
- Predictors
  - Lower NEADL scores
  - Higher Beck Anxiety Index scores



# Predictors of fatigue

	4 weeks	6 months
In a relationship	✓	✗
Reduced mobility	✓	✗
Reduced independence in ADLs	✗	✓
Higher levels of depressive symptoms	✓	✗
Higher levels of anxiety symptoms	✓	✓
Pre-existing fatigue	✓	✗



- Drummond A, Hawkins L, Sprigg N, Ward NS, Mistri A, Tyrrell P, Mead GE, Worthington E, Lincoln NB. The Nottingham Fatigue After Stroke (NotFAST) study: Factors associated with severity in stroke patients without depression. *Clinical Rehabilitation* 2017; 31(10):1406-1415 –published on line 1 March 2017. DOI: [10.1177/026921551769587](https://doi.org/10.1177/026921551769587)
- Hawkins L, Lincoln N, Sprigg N, Ward NS, Mistri A, Tyrrell P, Mead GE, Worthington E, Lincoln NB, Drummond A. The Nottingham Fatigue After Stroke (NotFAST) study: Results from follow up 6 months after stroke. *Topics in Stroke Rehabilitation*-published on line 11 Sep 2017. DOI: [10.1080/10749357.2017.1368912](https://doi.org/10.1080/10749357.2017.1368912).
- Worthington E, Hawkins L, Lincoln N, Drummond A. The day-to-day experiences of people with fatigue after stroke: Results from the Nottingham Fatigue after Stroke (NotFAST) study. *Int J of Therapy and Rehabilitation*- 2017: 24(10):449-455 DOI: [10.12968/ijtr.2017.24.10.449](https://doi.org/10.12968/ijtr.2017.24.10.449)



- Fatigue Severity Scale
- Used in 22 studies
- Easy to administer



Please circle the number between 1 and 7 which you feel best fits the following statements. 1= strongly disagree; 7= strongly agree

1. My motivation is lower when I am fatigued.
2. Exercise brings on my fatigue.
3. I am easily fatigued.
4. Fatigue interferes with my physical functioning.
5. Fatigue causes frequent problems for me.
6. My fatigue prevents sustained physical functioning.
7. Fatigue interferes with carrying out certain duties and responsibilities.
8. Fatigue is among my most disabling symptoms.
9. Fatigue interferes with my work, family, or social life.



# Approach?

History

**Nutrition**

Exercise

Rest/  
sleep

?

Pacing

Mood



## Case studies.

- **Mrs J** is a 65 year old woman who lives alone with her dog. She was previously fit and active. She is a widow.
- Although she has made a reasonably good recovery from her stroke, the community stroke team are concerned that she spends a lot of time in bed or sitting sleeping in front of the TV and is not engaging in her rehab programme. She has no real family or friends locally and her only daughter lives abroad.



- **Mr T** is a 45-year-old man who lives with his wife and three young children (2, 4 and 6).
- He works in IT and his wife is a full-time school teacher.
- Mr T had a stroke 3 months ago and despite a clumsy left hand, he has made a good recovery (note, he is right handed). However, he complains of being permanently tired and sleeps several hours most days as well as at night.
- He needs to go back to work in two weeks.



- **Mr B** is 80 and lives in a nursing home.
- He has a dense right hemiplegia and needs assistance with all ADL.
- He complains of being tired, sits in his chair for long periods dozing and will not participate in his rehabilitation or engage with the other residents.





## Acknowledgements

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Schwartz JE, Jandorf L, Krupp LB. The measurement of fatigue: A new instrument. *Journal of Psychosomatic Research*. 1993;37(7):753-62.