



Can breaking your wrist break your driving habit?

Dr Charles Musselwhite
Associate Professor
Centre for Innovative Ageing
Swansea University

c.b.a.musselwhite@swansea.ac.uk
www.drcharliemuss.com

Encouraging Life-Long Mobility: Tuesday 7th July 2015 16.00-17.30



- Melissa, Calcraft, Clinical Specialist Physiotherapist, Southmead Hospital, Southmead Road , Bristol, BS10 5NB Melissa.Calcrafft@nbt.nhs.uk
- Matthew Roberts, Research Fellow, College of Human and Health Sciences, Swansea Univerisyt, Singleton Park, Swansea, SA2 8PP m.s.roberts@swansea.ac.uk
- Rebecca Fox, Trauma Research Co-ordinator, Department of Orthopaedic Surgery, Frenchay Hospital, Frenchay Park Road, Bristol, BS16 1LE, UK Rebecca.Fox@nbt.nhs.uk
- Annette Swinkels, Research Fellow, Faculty of Health & Life Sciences, University of the West of England, Stapleton, Bristol, BS16 1DD Annette.Swinkels@uwe.ac.uk
- Pat Turton, Senior Lecturer, Faculty of Health & Life Sciences, University of the West of England, Stapleton, Bristol, BS16 1DD Pat2.Turton@uwe.ac.uk
- Sue Young, Participant Partner, University of the West of England, Stapleton, Bristol, BS16 1DD smsyoung32@talktalk.net



University of the
West of England

Centre for Transport & Society
School of Health & Social Care

North Bristol



NHS Trust



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Background:





- Life events have been demonstrated to be associated with travel behaviour change, and in particular mode switch due to weakened habits (van der Waerden et al, 2003).
 - including gaining or losing a driving licence,
 - moving home, and
 - starting a new job (van der Waerden, Timmermans, and Borgers, 2003; Klöckner, 2004).
- And that this provides a unique opportunity to target and promote travel behaviour change (Jones and Sloman, 2003).
- Disruptive events provide a pivotal point for developing new travel competences (Williams et al., 2013) even temporary ones:
 - Fuel protests (Chatterjee and Lyons, 2002),
 - Roadworks and closures (Fujii and Garling, often)
 - Adverse weather (see Cools et al., 2010).
 - Natural disasters (Graham ,2000),
 - Olympic games (Clements, 2013; TfL, 2013).

Premise:

Having the wrist or hand in plaster has the potential to disrupt habitual travel behaviour and is especially likely to create a short-term cessation in driver behaviour.





- Previous studies suggest prevalence of driving in a cast is mixed:

Edwards et al (2009)	UK	n=144	Postal survey	9%
Kennedy et al (2006)	Ireland	n=118	Survey	15%
Kalamaris et al (2006)	Australia	n=168	Survey	50% (2/3 of men, 1/3 of women)



- Motivation for driving/not driving unknown.
- Effect of information provision unknown
- But health practitioners are reluctant to give advice to patients, largely due to the ambiguity in guidelines about returning to driving e.g. in
 - UK (Nunez and Giddins, 2004; Von Arx et al, 2004; Edwards et al, 2009);
 - USA (Chen and Jupiter, 2007; Chong, 2010);
 - Australia (Kalamaras et al, 2006);
 - Netherlands (Haverkamp et al, 2005); and
 - Ireland (Kennedy et al, 2006).

Method





- Questionnaire sent to those having their (distal radius) cast removed by plaster technician to ask about prior travel behaviour, telephone follow up (response rate = 62%)
- n=111 (female 87; male 24)
- Av age = 57.08 years and met the criteria for normal distribution around a mode of 62 years.
- Females were slightly older than males, (no sig, diff)
- Participants had their casts on for between one and twelve weeks (median= 6 weeks, mean =5.5 weeks).
- On average, the participants drove 82.62 miles in a typical week, (males and younger drivers drove more mile)



Findings





	Drove in a cast	Did not drive in a cast
n	21 (18%)	90 (82%)
Mean age	53.38 years	57.94 years
Ordinary mileage	78.41 miles	104.05 miles
Male/female	9 (37.5%) /12 (13.8%)	15 (63.5%) /75 (86.2%)
Length of time in plaster	5.38 weeks	5.53 weeks



- For those that drove
 - 15 drove less than normal (with 11 of these driving far less frequently).
 - 5 people continued to drive the same amount
 - 1 person drove more frequently.
- On the whole, people who drove with a cast stated that they thought it was safe to do so, and used compensatory behaviours to help them drive with an arm in a cast...



Did driving in a cast alter driver behaviour?
1= strongly disagree through to 7=strongly agree

	N	Min	Max	Mean	SD
Observational skills worse in cast	21	1	7	1.57	1.54
Cast made driving more dangerous	21	1	7	2.38	1.91
More risky driver with arm in cast	21	1	7	2.67	2.03
Steering was more difficult with arm in cast	21	1	7	3.52	2.38
Cast made driving uncomfortable	21	1	7	3.81	1.94
Easy to drive in cast	21	1	7	4.19	2.04
Easy to change gear	20	1	7	4.35	2.39
More difficult to do manoeuvres	21	1	7	4.71	2.19
Total control with arm in cast	21	1	7	5.48	2.06
Used compensatory behaviours	21	1	7	5.52	1.78
Safe to drive with arm in cast	21	2	7	5.86	1.62

	Mean (SD)	Drove while in cast	N	Mean	Std. Deviation	Significant difference found
Effect on total miles	1.73 (1.56)	No	90	1.73	1.57	t(109)=0.05; p=0.96; d=0.01 ns
		Yes	21	1.71	1.52	
Cycled	2.79 (1.96)	No	90	3.04	1.99	t(41.9)=3.61; p=0.001; d=0.78*
		Yes	21	1.71	1.38	
Lifts with friends/family	4.51 (1.79)	No	90	4.72	1.66	t(109)=2.61; p=0.01; d=0.58*
		Yes	21	3.62	2.09	
Walked	5.29 (1.77)	No	90	5.51	1.57	t(24.8)=2.27; p=0.032; d=0.61 ns
		Yes	21	4.33	2.24	
Bus	5.78 (1.6)	No	90	5.90	1.48	t(109)=1.59; p=.114; d=0.35 ns
		Yes	21	5.29	2.00	
Effect on total journeys taken	5.86 (1.74)	No	90	6.18	1.37	t(23.1)=3.12; p=0.005; d=0.86*
		Yes	21	4.48	2.42	
Train	5.95 (1.5)	No	90	6.10	1.32	t(24.1)=1.65; p=.112; d=0.45 ns
		Yes	21	5.33	2.03	

Self-reported changes in use of modes when arm was in plaster (1=much less/fewer through to 7=much more; significant differences in bold)

Miles: reduced. Cycling reduced (esp for drivers), lifts up for non-drivers, down for drivers, walking increases, using the bus increases, total journeys increases (esp for non drivers).



- Motivations?
- Are they risky people? (Musselwhite, 2006)
 - No
- Are they more passionate about their car? (Ellaway et al., 2003)
 - No



QUESTIONNAIRE STATEMENT	N	MEAN SCORE (1=disagree to 7= agree)	SD	SIGNIFICANT GENDER OR AGE DIFFERENCES
Driving helps me get from A to B	111	6.64	0.90	
Driving makes me feel independent	111	6.32	1.43	
I am a very safe driver	111	5.91	1.18	
I feel in control when I drive	111	5.77	1.47	
If I couldn't drive life would be extremely inconvenient	111	5.41	1.90	
Driving keeps mind active	111	5.21	1.84	Older significantly higher than younger $t(107)=2.21; p<0.05$
Without driving I could not fulfil activities	111	4.99	2.07	
Not being able to drive makes me feel isolated	111	4.99	2.16	
I love to drive	111	4.97	1.77	
When I drive I feel a sense of accomplishment	111	4.76	1.98	
Most people should drive like I do	111	4.71	1.61	
I feel very safe on the roads	111	4.54	1.78	
Driving is part of who I am	111	4.33	2.16	
My driving style reflects my personality	111	4.31	2.06	
Driving makes me feel good about myself	111	4.16	2.12	
I feel safe from the risk of crime when I drive	110	4.03	1.89	
When I drive it makes me feel I'm doing well in life	111	3.94	2.03	
I feel attached to driving	111	3.86	2.22	Males significantly higher than females $t(33)=2.11; p<0.05$
Driving says something about my personality	111	3.86	2.02	
I can get away from the stresses of life when I drive	111	3.82	2.11	
I feel safe from other traffic when I drive	111	3.53	1.92	



BEHAVIOUR (1=NEVER TO 7=VERY OFTEN)	N	MEAN	SD	SIGNIFICANT GENDER OR AGE DIFFERENCES (Older: >59 years)
Driving faster than thought so slow down	111	6.23	1.40	
Realise driving faster than thought	111	3.77	1.54	
In a hurry to get somewhere	111	3.41	1.46	Younger sig. higher than older t (109)=2.83; p<0.01
Feel 30mph should be 40mph	111	3.29	1.72	Males sig. higher than females t (35)=2.43; p<0.05
Drive faster as feel safe to do so	111	2.50	1.54	Younger sig. higher than older t (109)=2.69; p<0.01
Drive faster when in a hurry	111	2.30	1.48	Younger sig. higher than older t (67)=2.94; p<0.01
Use different lane to get ahead	111	2.16	1.46	
When late use different lane to get ahead	111	2.15	1.44	
Drive faster if angry	111	1.94	1.38	Younger sig higher than older t (109)=2.75; p<0.01
Use fast acceleration / heavy braking if late	111	1.92	1.24	Males sig. higher than females t (109)=2.47; p<0.05 Younger sig. higher than older t (109)=3.98; p<0.01
If late then drive close to vehicle in front	111	1.69	1.90	Younger sig. higher than older t (109)=3.20; p<0.01
Use fast acceleration / heavy braking	111	1.63	0.90	Younger sig. higher than older t (109)=4.19; p<0.01
Drive faster if car is close behind	111	1.61	1.07	
Drive faster than speed limit even though feels unsafe	111	1.43	0.91	Younger sig. higher than older t (109)=4.03; p<0.01
Perform dangerous overtaking if late	111	1.39	0.95	Males sig. higher than females t (109)=1.43; p<0.05
Perform dangerous overtaking	111	1.32	0.84	Males sig. higher than females t (109)=3.58; p<0.01 Younger sig. higher than older t (109)=2.86; p<0.01



Did information make any difference?

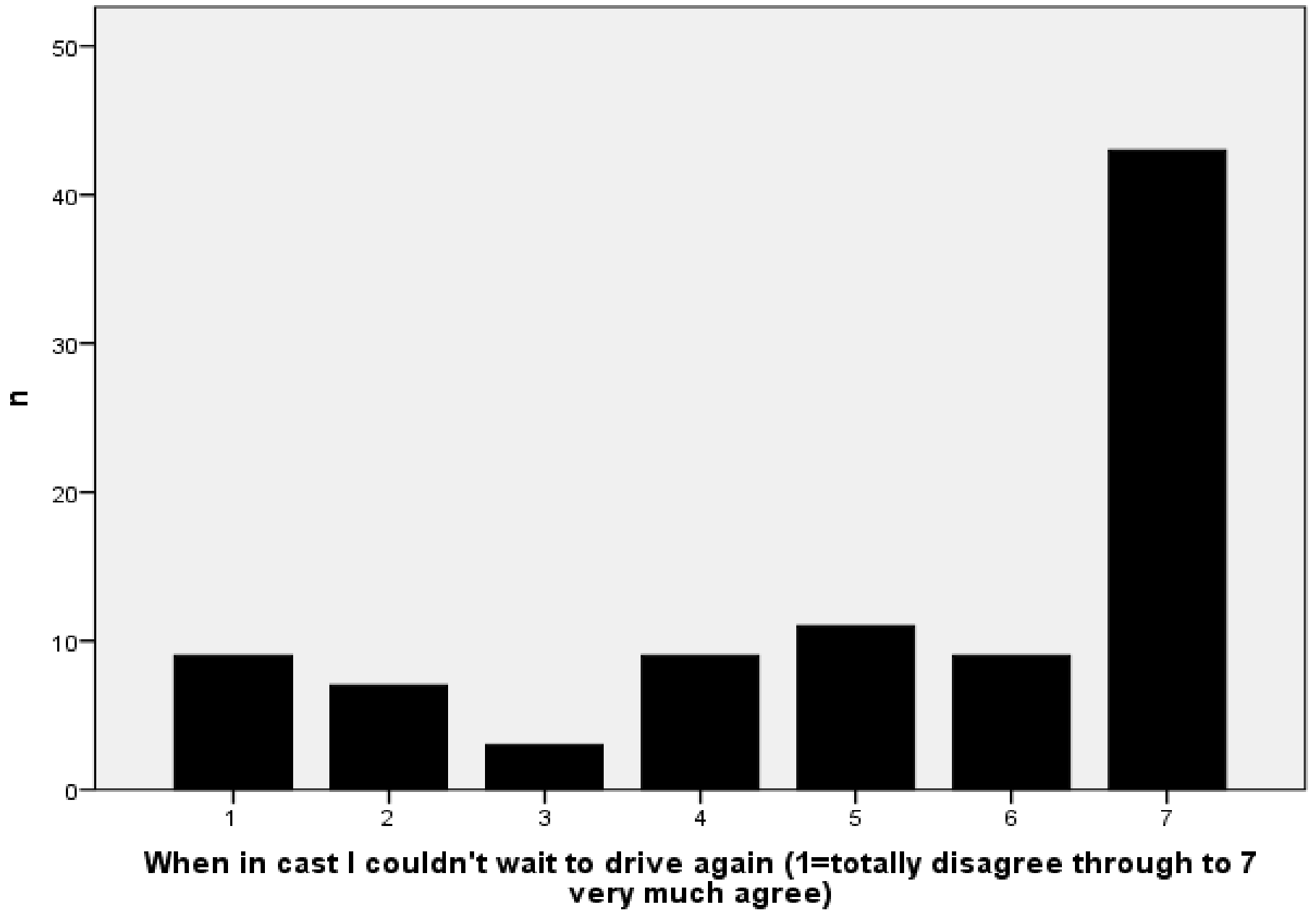
Overall 11 people drove who were told not to, 7 of those by medical professionals..

If the information “not to drive” came from a doctor or plaster technician then this seemed to have a stronger effect on a person not driving.

Information sought from	Approached for information	Was told...Don't Drive(of which ended up driving)	Advice given	Was told...Don't Drive(of which ended up driving)
Doctor	22	16 (2 drove) 12.5%	7	7 (1 drove) 14.29% drove
Nurse	10	5 (1 drove) 20%	2	1 (1 drove) 100% drove
GP	2	2 (1 drove) 50%	0	0
Plaster Technician	11	9 (1 drove) 11.11%	4	2 (0 drove) 0% drove
Other medical person	4	2 (0 drove) 0%	2	2 (0 drove) 0% drove
All health combined	45	33 (5 drove) 15.15%	17	12 (2 drove) 16.67%
Family and friends	11	9 (2 drove) 22.22%	14	8 (1 drove) 14.29% drove
Insurance company	6	3 (1 drove) 33.33%	0	0
Total: told do not drive	66 sources from 45 people (1.47 sources/person)	46 (8 drove/38 didn't) 17.39% drove	29 sources from 26 people (1.12 sources/person)	20 (3 drove/17 didn't) 15% drove
No information	58 people had no information	58 (11 drove/47 didn't) 18.97%		



- But...
sadly...





Conclusion



- 18% drove with their arm in a cast
- More males than females
- High milers
- Attitudes to risk and affect with driving and the car = no effect
- Motivation is then utility or perceived necessity
- Information source may have an effect – plaster technician/doctor esp. Male?
- 82% change their travel behaviour for around 5-6 weeks. Travel behaviour is flexible.
- But can't wait to get back in the car?
But who can?



IO109 "coz even on the bus my husband came too [on the bus] and he said "it's different up here you can see get a good view and see the world go by Is sort of relaxing and you don't have to park when you get there. I mean um, it's given me the chance to do, er to see things that I wouldn't have, do otherwise. I would have just carried on driving and with life rushing here and there and everywhere so it's got me to different things"



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