

# Using the reshape package



Adrian Katschke

Research and Regulatory Affairs  
Nursing Research  
adrian.katschke@stvincent.org

15/09/15

- reshape data long to wide
- aggregate data using functions
- two functions melt and cast

patid	visitid	keppra	mtxlvl.24	mtxlvl.48	mtxlvl.72
1	20	No	54.67	9.12	0.07
10	22	No	18.31	1.33	0.10
10	26	No	25.91	0.32	0.02
10	30	No	14.24	0.21	0.00
11	134	No	6.08	0.27	0.00

```
mtx.mlt1 <- melt(  
  mtx_mtxlvl, id=c("  
    patid", "visitid", "  
    dob", "trt_age", "  
    height", "weight"),  
  measured=c("mtxlvl  
    .24", "mtxlvl.48", "  
    mtxlvl.72"))
```

patid	visitid	keppra	lab.var	value
1	20	No	mtxlvl.24	54.67
1	20	No	mtxlvl.48	9.12
1	20	No	mtxlvl.72	0.07
10	22	No	mtxlvl.24	18.31
10	22	No	mtxlvl.48	1.33
10	22	No	mtxlvl.72	0.10

```
mtx.mlt1.lab <- cbind(mtx.mlt1.srt,  
                      colsplit(mtx.mlt1.srt$variable,  
                              names=c("lab","time"),  
                              split="\\."))
```

patid	visitid	keppra	value	lab	time
1	20	No	54.67	mtxlvl	24
1	20	No	9.12	mtxlvl	48
1	20	No	0.07	mtxlvl	72

```
mtx.mltf <- melt(mtx_both,  
  id=c("patid","visitid","keppra","trt_age"),  
  variable_name="lab.var")
```

patid	visitid	keppra	lab.var	value
1	20	No	mtxlvl.24	54.67
1	20	No	scr.24	1.00
1	20	No	mtxlvl.48	9.12
1	20	No	scr.48	0.90
1	20	No	mtxlvl.72	0.07
1	20	No	scr.72	1.10



patid	visitid	keppra	lab.var	value	lab	time
1	20	No	mtxlvl.24	54.67	mtxlvl	24
1	20	No	scr.24	1.00	scr	24
1	20	No	mtxlvl.48	9.12	mtxlvl	48
1	20	No	scr.48	0.90	scr	48
1	20	No	mtxlvl.72	0.07	mtxlvl	72
1	20	No	scr.72	1.10	scr	72

- `data`: the molten data set to reshape
- `formula`: the casting formula which describes the shape of the output format
- `fun.aggregate`: aggregation function to use
- `margins`: what marginal values should be computed

patid	visitid	mtxlv1.24	mtxlv1.48	mtxlv1.72
1	20	54.67	9.12	0.07
10	22	18.31	1.33	0.10
10	26	25.91	0.32	0.02
10	30	14.24	0.21	0.00
11	107	5.66	0.85	0.24
11	134	6.08	0.27	0.00

patid	visitid	keppra	time	mtxlvl	scr
1	20	No	24	54.67	1.0
1	20	No	48	9.12	0.9
1	20	No	72	0.07	1.1
10	22	No	24	18.31	0.6
10	22	No	48	1.33	0.7
10	22	No	72	0.10	1.1

```
cast(mtx.mltf.lab,  
     keppra ~ lab, mean,  
     na.rm = TRUE)
```

keppra	mtxlv1	scr
No	4.4	1.11
Yes	2.2	0.90
	7.8	0.79

```
cast(mtx.mltf.lab, lab
     ~., quantile, c
     (0.25,0.5,0.75), na
     .rm = TRUE)
```

lab	X25.	X50.	X75.
mtxlvl	0.1	0.405	2.655
scr	0.8	1.000	1.200



```
cast(mtx.mltf.lab, time + keppra
     ~ lab, mean, na.rm = TRUE)
```

time	keppra	mtxlv1	scr
24	No	12.38	1.05
24	Yes	5.68	0.89
24		22.43	0.83
48	No	1.12	1.07
48	Yes	0.57	0.90
48		0.68	0.76
72	No	0.36	1.23
72	Yes	0.12	0.90
72		0.19	

```
cast(mtx.mltf.lab, time
  + keppra ~ lab,
  mean, na.rm = TRUE,
  margins = 'time
  '))
```

time	keppra	mtxlvl	scr
24	No	12.38	1.05
24	Yes	5.68	0.89
24	(all)	11.57	1.02
24		22.43	0.83
48	No	1.12	1.07
48	Yes	0.57	0.90
48	(all)	1.06	1.05
48		0.68	0.76
72	No	0.36	1.23
72	Yes	0.12	0.90
72	(all)	0.33	1.19
72		0.19	



-  R Core Team (2015). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria.  
<https://www.R-project.org/>.
-  H. Wickham. Reshaping data with the reshape package. Journal of Statistical Software, 21(12), 2007.  
<http://www.jstatsoft.org/v21/i12/paper>