

## Bayesian Repeated Measures ANOVA

Adjunctive study: Covariates type of epilepsy and numberofAED at T1

### Model Comparison

Models	P(M)	P(M data)	BF <sub>M</sub>	BF <sub>10</sub>	error %
time + numberofAED.1	0.05	0.25	6.20	1.00	
time + EpiArt.1 + numberofAED.1	0.05	0.12	2.47	0.47	44.68
time + EpiArt.1	0.05	0.11	2.41	0.46	45.09
time + treatment arm + numberofAED.1 + time * treatment arm	0.05	0.08	1.76	0.34	44.80
time + treatment arm + numberofAED.1	0.05	0.08	1.63	0.32	44.77
time + treatment arm + EpiArt.1 + time * treatment arm	0.05	0.06	1.31	0.26	44.81
time + treatment arm + EpiArt.1 + numberofAED.1 + time * treatment arm	0.05	0.06	1.25	0.25	44.82
time + treatment arm + EpiArt.1 + numberofAED.1	0.05	0.06	1.14	0.23	44.79
time + treatment arm + EpiArt.1	0.05	0.06	1.12	0.23	44.77
time	0.05	0.05	1.04	0.21	44.68
time + treatment arm + time * treatment arm	0.05	0.04	0.74	0.15	44.79
time + treatment arm	0.05	0.03	0.66	0.14	44.69
numberofAED.1	0.05	1.59e -4	3.02e -3	6.46e -4	44.84
EpiArt.1 + numberofAED.1	0.05	1.22e -4	2.32e -3	4.96e -4	44.67
EpiArt.1	0.05	1.15e -4	2.19e -3	4.67e -4	44.69
treatment arm + numberofAED.1	0.05	7.51e -5	1.43e -3	3.05e -4	44.75
Null model (incl. subject)	0.05	5.61e -5	1.07e -3	2.28e -4	44.67
treatment arm + EpiArt.1 + numberofAED.1	0.05	5.32e -5	1.01e -3	2.16e -4	44.76
treatment arm + EpiArt.1	0.05	5.19e -5	9.87e -4	2.11e -4	44.75
treatment arm	0.05	3.49e -5	6.63e -4	1.42e -4	44.68

*Note.* All models include subject

### Analysis of Effects

Effects	P(incl)	P(incl data)	BF <sub>incl</sub>
time	0.40	0.75	1124.91
treatment arm	0.40	0.23	0.43
EpiArt.1	0.50	0.47	0.87

## Analysis of Effects

Effects	P(incl)	P(incl data)	BF <sub>incl</sub>
numberofAED.1	0.50	0.64	1.81
time * treatment arm	0.20	0.25	1.10

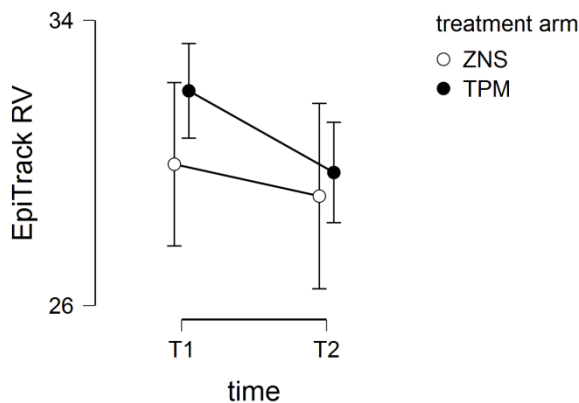
**Note.** Compares models that contain the effect to equivalent models stripped of the effect. Higher-order interactions are excluded. Analysis suggested by Sebastiaan Mathôt.

## Descriptives

time	treatment arm	Mean	SD	N	95% Credible Interval	
					Lower	Upper
T1	TPM	32.02	4.41	45.00	30.70	33.35
	ZNS	29.96	5.90	28.00	27.68	32.25
T2	TPM	29.73	4.68	45.00	28.33	31.14
	ZNS	29.07	6.70	28.00	26.47	31.67

## Descriptives plots

### Descriptives Plot



## Repeated Measures ANOVA

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
time	7.65	1	7.65	1.47	0.23	0.02
time * treatment arm	22.46	1	22.46	4.32	0.04	0.06
time * EpiArt.1	3.19	1	3.19	0.61	0.44	0.01
time * numberofAED.1	0.67	1	0.67	0.13	0.72	0.00
Residual	359.11	69	5.20			

**Note.** Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p	$\eta^2_p$
treatment arm	0.06	1	0.06	1.29e-3	0.97	0.00
EpiArt.1	62.03	1	62.03	1.28	0.26	0.02
numberofAED.1	109.63	1	109.63	2.27	0.14	0.03
Residual	3333.79	69	48.32			

Note. Type III Sum of Squares

### Assumption Checks

#### Test of Sphericity

	Mauchly's W	Approx. X <sup>2</sup>	df	p	Greenhouse-Geisser $\epsilon$	Huynh-Feldt $\epsilon$	Lower Bound $\epsilon$
time	1.00 <sup>a</sup>	NaN <sup>a</sup>	NaN <sup>a</sup>	NaN <sup>a</sup>	1.00 <sup>a</sup>	1.00 <sup>a</sup>	1.00 <sup>a</sup>

<sup>a</sup> Singular error SSP matrix: The repeated measure has only two levels, or more levels than observations. When the repeated measure has two levels, the assumption of sphericity is always met.

#### Test for Equality of Variances (Levene's)

	F	df1	df2	p
epitrack.1	4.07	1.00	71.00	0.05
epitrack.2	6.82	1.00	71.00	0.01

### Friedman Test

Specified ANOVA design is not balanced.

#### Factor Chi-Squared df p Kendall's W

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### Conover's Post Hoc Tests

#### Conover's Post Hoc Comparisons - time

	T-Stat	df	W <sub>i</sub>	W <sub>j</sub>	p	p <sub>bonf</sub>	p <sub>holm</sub>
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### Descriptives Plot

