

## Supplementary File

**Four groups, 5 outcome trajectory model**

988 observations read.  
 3 had no trajectory data in one or more models.  
 985 observations used in the trajectory model.

**1. HAQ**

Maximum Likelihood Estimates  
 Model: Censored Normal (cnorm)

Group	Parameter	Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
1	Intercept	-0.06313	0.03255	-1.939	0.0525
	Linear	-0.01045	0.00122	-8.561	0.0000
	Quadratic	0.00006	0.00001	6.610	0.0000
2	Intercept	0.49903	0.02125	23.489	0.0000
	Linear	-0.00630	0.00073	-8.689	0.0000
	Quadratic	0.00004	0.00000	7.220	0.0000
3	Intercept	1.09758	0.01960	55.994	0.0000
	Linear	-0.00274	0.00069	-3.964	0.0001
	Quadratic	0.00002	0.00000	4.043	0.0001
4	Intercept	1.68822	0.02343	72.060	0.0000
	Linear	0.00200	0.00090	2.215	0.0268
	Quadratic	-0.00001	0.00001	-1.519	0.1288
	Sigma	0.50134	0.00447	112.256	0.0000

**2. PainWeek**

Maximum Likelihood Estimates  
 Model: Censored Normal (cnorm)

Group	Parameter	Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
1	Intercept	15.60993	1.07749	14.487	0.0000
	Linear	-0.18391	0.03921	-4.691	0.0000
	Quadratic	0.00130	0.00027	4.787	0.0000
2	Intercept	32.32869	0.87359	37.007	0.0000
	Linear	-0.09043	0.02954	-3.061	0.0022
	Quadratic	0.00064	0.00020	3.138	0.0017
3	Intercept	46.52522	0.78020	59.632	0.0000
	Linear	0.01334	0.02808	0.475	0.6348
	Quadratic	0.00020	0.00020	1.013	0.3112
4	Intercept	58.55165	0.96685	60.559	0.0000
	Linear	0.08709	0.03723	2.339	0.0193
	Quadratic	-0.00036	0.00027	-1.296	0.1952
	Sigma	20.83857	0.15436	134.998	0.0000

**3. Arthcond**

Maximum Likelihood Estimates  
 Model: Censored Normal (cnorm)

Group	Parameter	Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
1	Intercept	15.55170	1.10300	14.099	0.0000
	Linear	-0.21834	0.04003	-5.455	0.0000
	Quadratic	0.00141	0.00028	5.087	0.0000
2	Intercept	32.42543	0.89413	36.265	0.0000
	Linear	-0.12636	0.03016	-4.190	0.0000
	Quadratic	0.00078	0.00021	3.758	0.0002
3	Intercept	47.05029	0.79555	59.142	0.0000
	Linear	-0.03811	0.02879	-1.324	0.1855
	Quadratic	0.00034	0.00020	1.680	0.0929
4	Intercept	57.36250	0.98789	58.066	0.0000
	Linear	0.05893	0.03782	1.558	0.1192
	Quadratic	-0.00028	0.00028	-1.023	0.3064
	Sigma	21.25620	0.15766	134.821	0.0000

#### 4. Health

Maximum Likelihood Estimates  
Model: Censored Normal (cnorm)

Group	Parameter	Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
1	Intercept	81.29972	0.85919	94.623	0.0000
	Linear	0.12357	0.03110	3.973	0.0001
	Quadratic	-0.00091	0.00021	-4.224	0.0000
2	Intercept	72.47985	0.66679	108.699	0.0000
	Linear	0.05356	0.02322	2.307	0.0211
	Quadratic	-0.00034	0.00016	-2.113	0.0346
3	Intercept	61.80468	0.62737	98.514	0.0000
	Linear	0.03977	0.02275	1.748	0.0804
	Quadratic	-0.00028	0.00016	-1.791	0.0734
4	Intercept	48.91202	0.76541	63.903	0.0000
	Linear	0.10332	0.02958	3.493	0.0005
	Quadratic	-0.00071	0.00022	-3.280	0.0010
	Sigma	16.45292	0.12034	136.720	0.0000

#### 5. Aqo1

Maximum Likelihood Estimates  
Model: Censored Normal (cnorm)

Group	Parameter	Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
1	Intercept	0.80817	0.00856	94.448	0.0000
	Linear	0.00103	0.00030	3.413	0.0006
	Quadratic	-0.00001	0.00000	-3.083	0.0021
2	Intercept	0.68344	0.00643	106.267	0.0000
	Linear	0.00081	0.00022	3.650	0.0003
	Quadratic	-0.00001	0.00000	-3.875	0.0001
3	Intercept	0.51275	0.00619	82.881	0.0000
	Linear	0.00053	0.00022	2.468	0.0136

	Quadratic	-0.00001	0.00000	-4.187	0.0000
4	Intercept	0.27277	0.00746	36.575	0.0000
	Linear	-0.00020	0.00028	-0.711	0.4770
	Quadratic	-0.00000	0.00000	-0.523	0.6011
	Sigma	0.15819	0.00120	131.528	0.0000

## Group membership

1	(%)	17.13935	1.27724	13.419	0.0000
2	(%)	28.85902	1.53871	18.755	0.0000
3	(%)	31.97457	1.56734	20.401	0.0000
4	(%)	22.02707	1.35673	16.235	0.0000

BIC=-131690.88 (N=49352) BIC=-131557.80 (N=985) AIC=-131391.45 ll= -131323.45

Entropy = 0.881

Supplementary Table 1: Baseline data on comorbidities (comorbid medical illnesses) for ARAD participants stratified by trajectories of pain-related health status

Baseline	Group1 (better)	Group2	Group3	Group4 (poorer)	P-value	Total
<b>Number of participants, N</b>	169	285	316	218		988
<b>COMORBIDITIES: n (%)</b>						
<b>Hypertension</b>	28 (17%)	58 (20%)	77 (24%)	70 (32%)	<0.001	233 (24%)
<b>Hypercholesterolemia</b>	15 (9%)	37 (13%)	55 (17%)	30 (14%)	0.085	137 (14%)
<b>Cardiovascular diseases<sup>1</sup></b>	0	4 (1.4%)	5 (1.6%)	12 (5.5%)	< 0.001	21 (2%)
<b>Diabetes mellitus<sup>2</sup></b>	9 (5%)	21 (7%)	27 (9%)	24 (11%)	0.038	81 (8%)
<b>Thyroid disease</b>	7 (4%)	24 (8%)	33 (10%)	28 (13%)	0.003	92 (9%)
<b>Lung diseases<sup>3</sup></b>	9 (5%)	21 (7%)	36 (11%)	41 (19%)	<0.001	107 (11%)
<b>Gastrointestinal diseases<sup>4</sup></b>	9 (5%)	36 (13%)	56 (18%)	49 (22%)	<0.001	150 (15%)
<b>Osteoporosis</b>	5 (3%)	23 (8%)	32 (10%)	23 (11%)	0.008	83 (8%)
<b>Depression</b>	5 (3%)	28 (10%)	41 (13%)	66 (30%)	< 0.001	140 (14%)

ARAD: Australian Rheumatology Association Database,

<sup>1</sup>Cardiovascular diseases include angina (stable/unstable), heart attack, coronary artery bypass graft and coronary angioplasty/stenting.

<sup>2</sup>Diabetes mellitus include insulin- and non-insulin dependent types.

<sup>3</sup>Lung diseases include asthma, bronchiectasis, and smoking-related disease.

<sup>4</sup>Gastrointestinal diseases include ulcers, reflux, hiatus hernia, Crohn's disease, and ulcerative colitis.