

A Comparative Look at Pain Prevalence: Europe and U.S.

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Health Trends – Pain Trends

Evaluating population level health trends important.

Consider population aging and increasing longevity.

Much attention has been paid to some trends: e.g., mortality, disability.

Comparatively –little attention on pain trends.

Few if any national studies (Grol-Prokopczyk, 2017; Zimmer & Zajacova, forthcoming).

Few if any comparative studies.*

Pain questions in HRS and AHEAD

1. Are you often troubled by pain?

No

Yes



2. How bad is the pain most of the time?

Mild

Moderate

Severe

3. Does the pain limit your ability
to do usual activities?

No

Yes

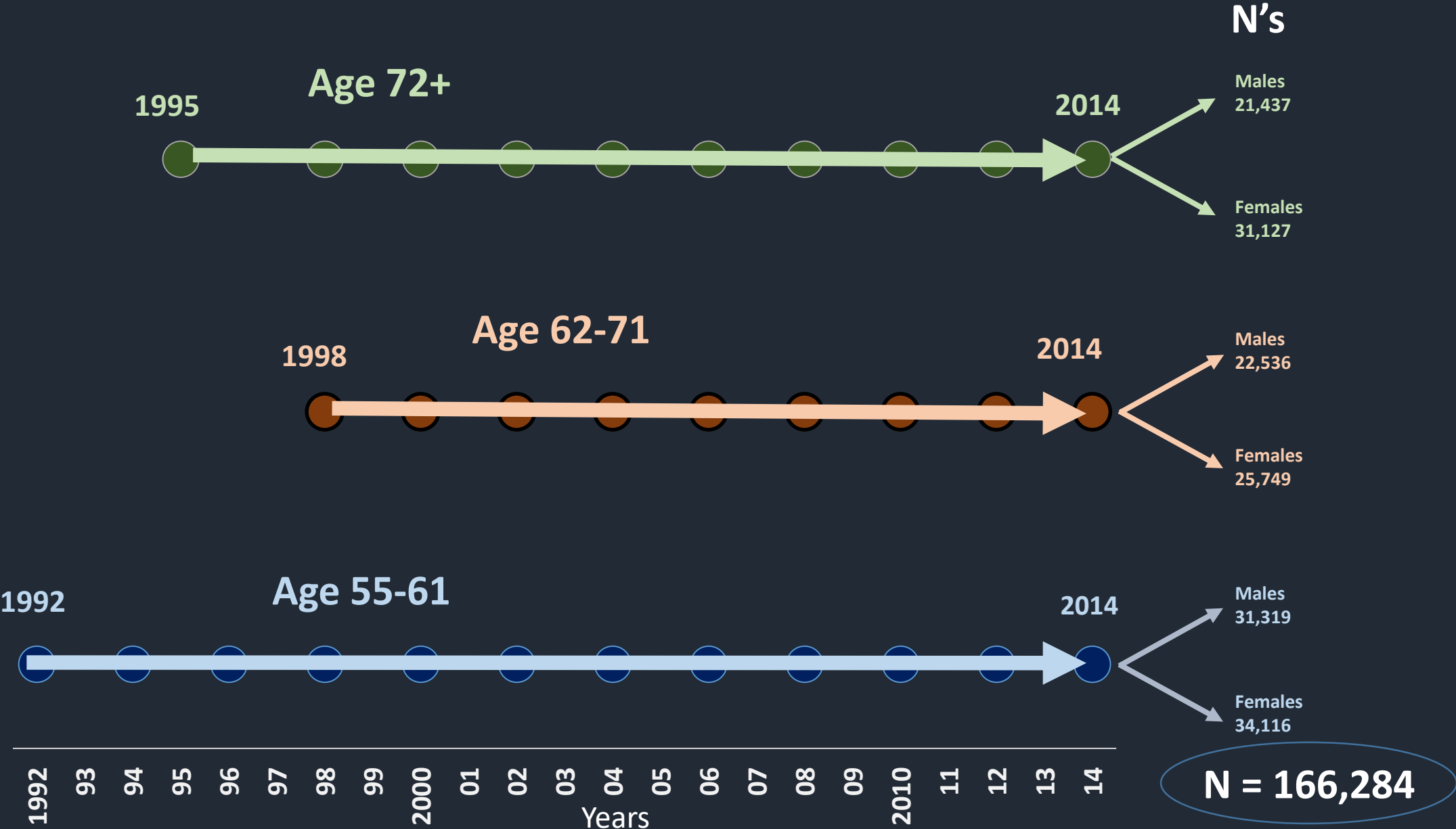
Three measures

Any pain (~ 30%)

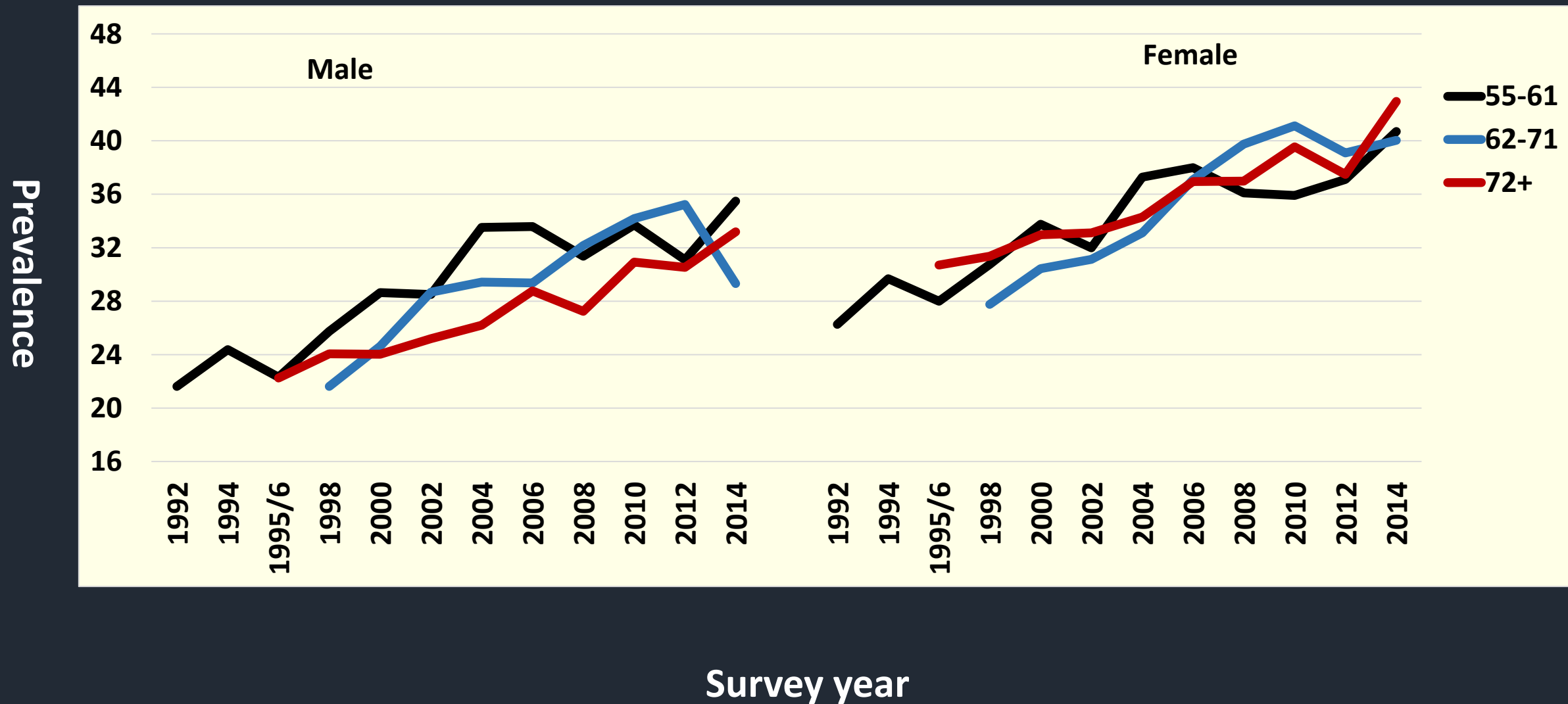
Mild/moderate + not limiting
(~10%)

Severe +/- limiting (~20%)

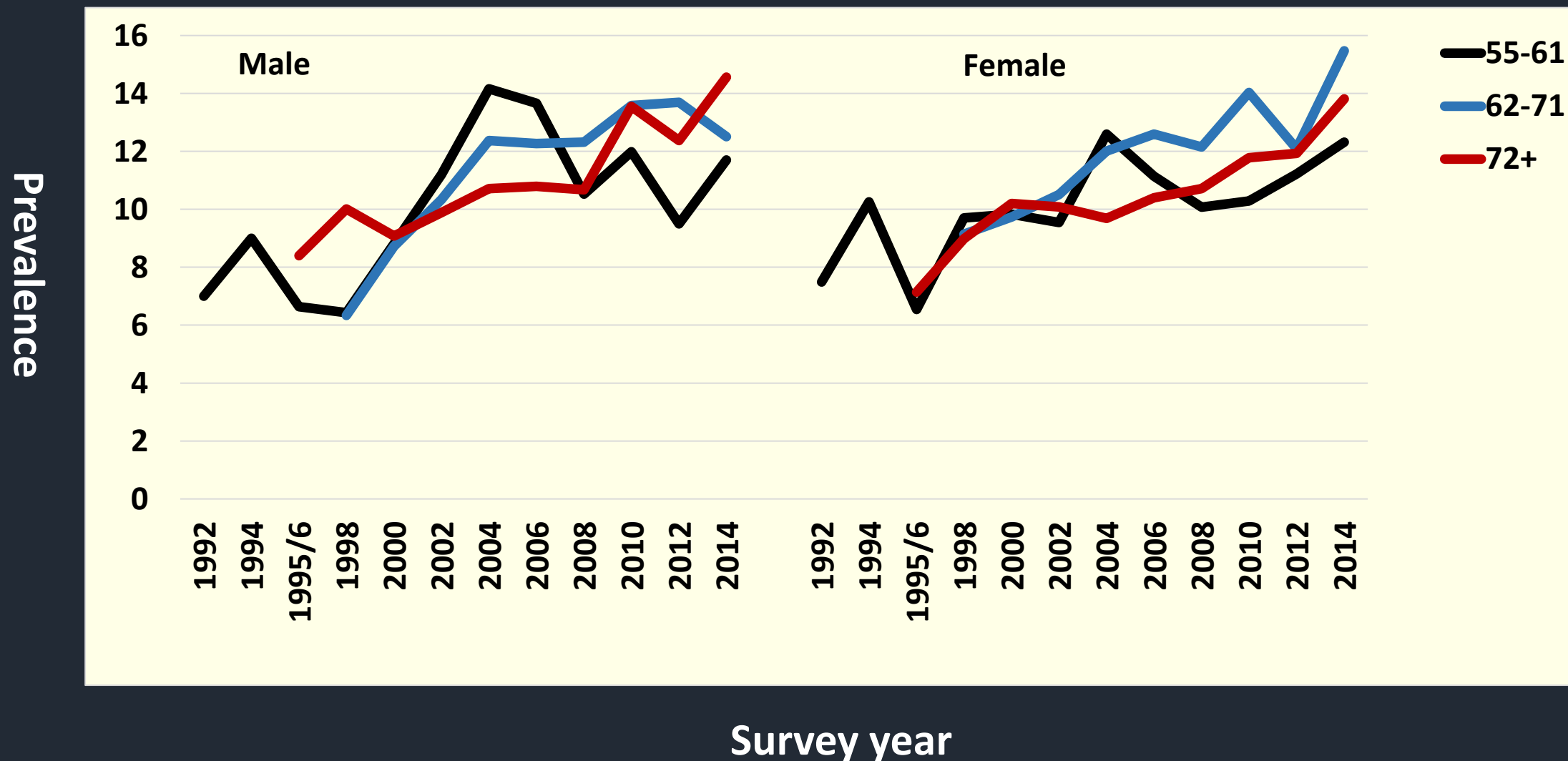
Data structure for following trends



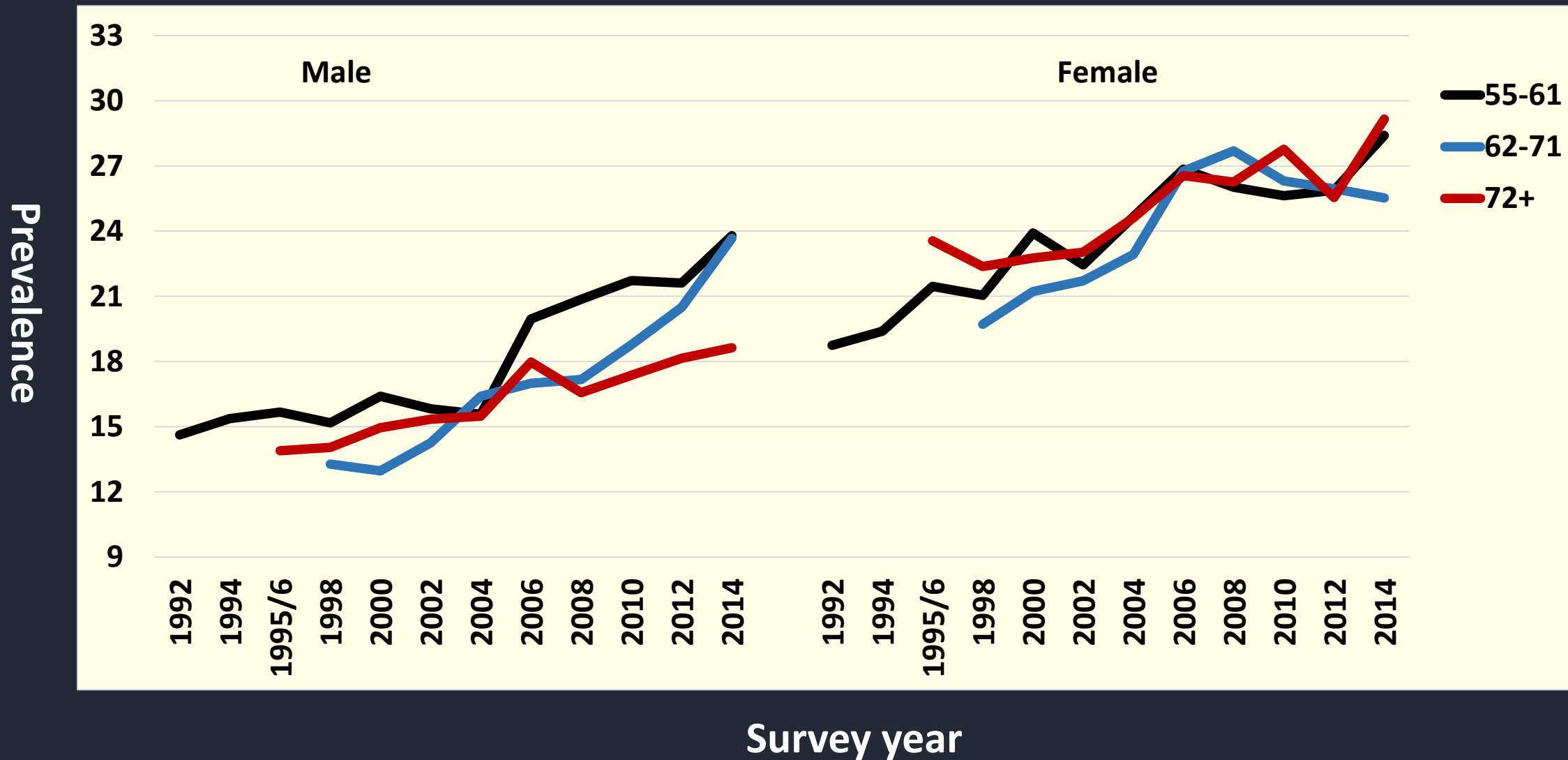
Trend - pain of any severity



Trend - mild non-limiting pain



Trend - severe and/or limiting pain



Average annual percent change, weighted

| | Males | Females |
|-----------------------------|-------|---------|
| Any pain | +2.4 | +2.0 |
| Mild non-limiting pain | +2.6 | +2.6 |
| Severe and/or limiting pain | +2.3 | +1.7 |

Patterns remain after controlling for:

- Age
- Sex
- Race
- Marital status
- Education
- Wealth
- Six chronic conditions

Conclusion

- **Dramatic increase in pain prevalence among adults 55 and older in the U.S. from 1992 to 2014.**

Survey of Health, Aging and Retirement in Europe



26 countries in Europe + Israel.

Age 50+.

Six waves from 2004 to 2015.

Each wave includes a refreshed sample.

Representative of the population 50+.

Pain questions

Wave 1
2004

Wave 2
2006

Wave 4
2011

For the past six months at least, have you been bothered by any of these health conditions?

Pain in your back, knees, hips or any other joint?

Yes

No

Wave 5
2013

Wave 6
2015

Are you troubled with pain?

Yes

No

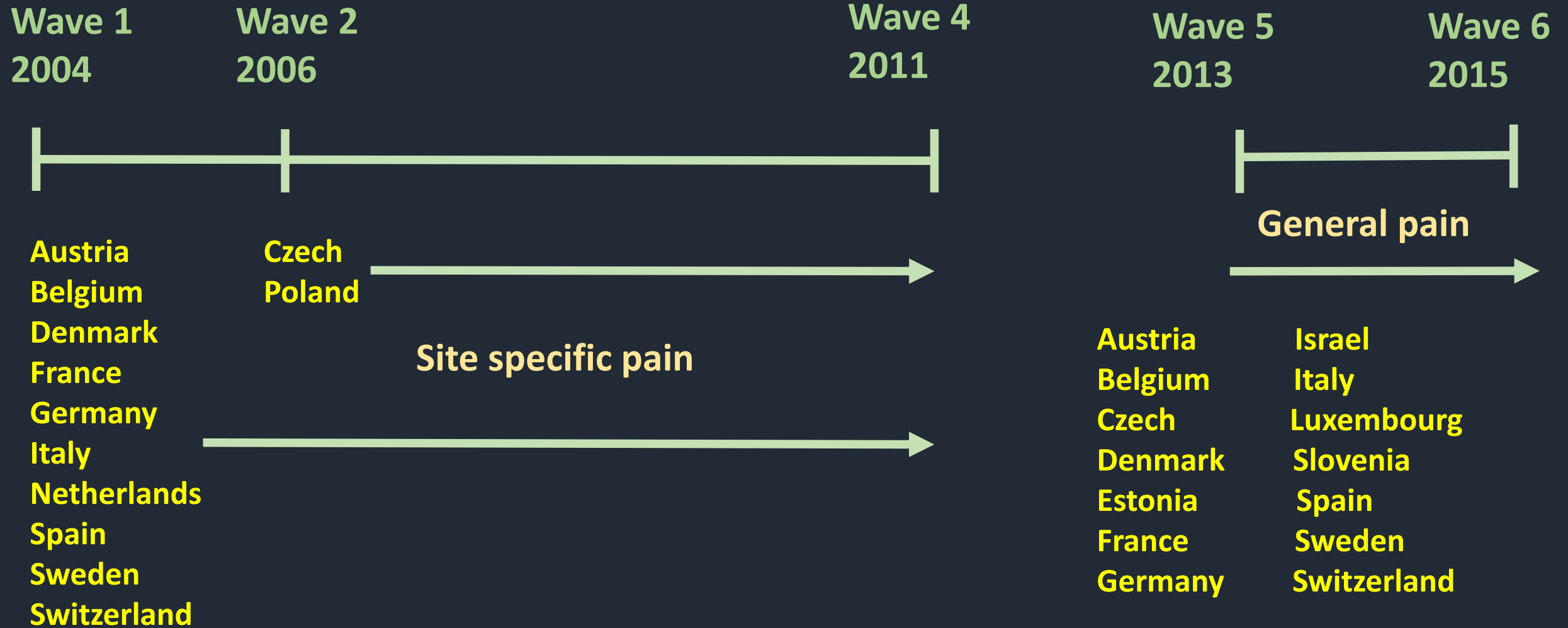
IF YES, how bad is it most of the time?

Mild

Moderate

Severe?

Data structure



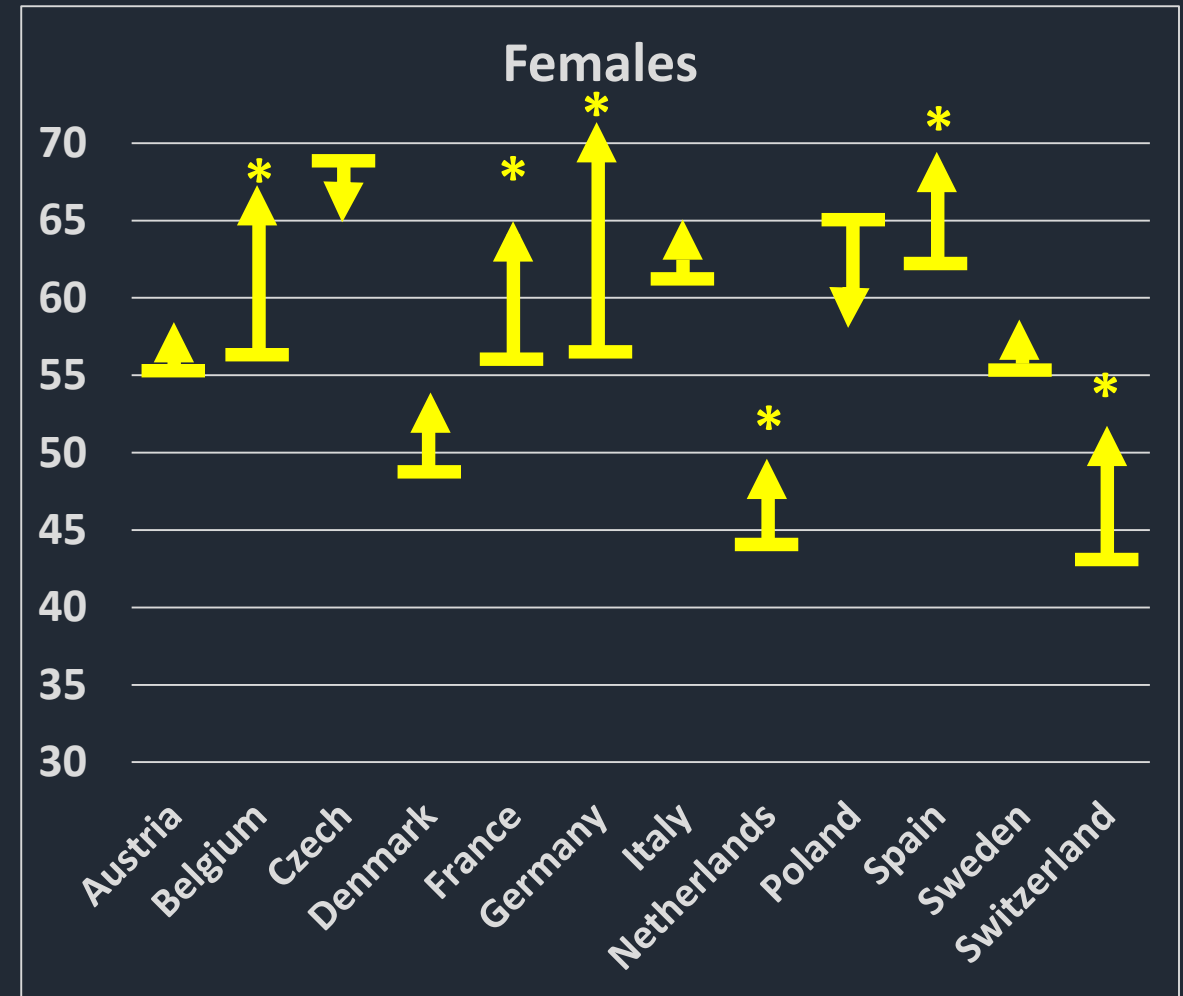
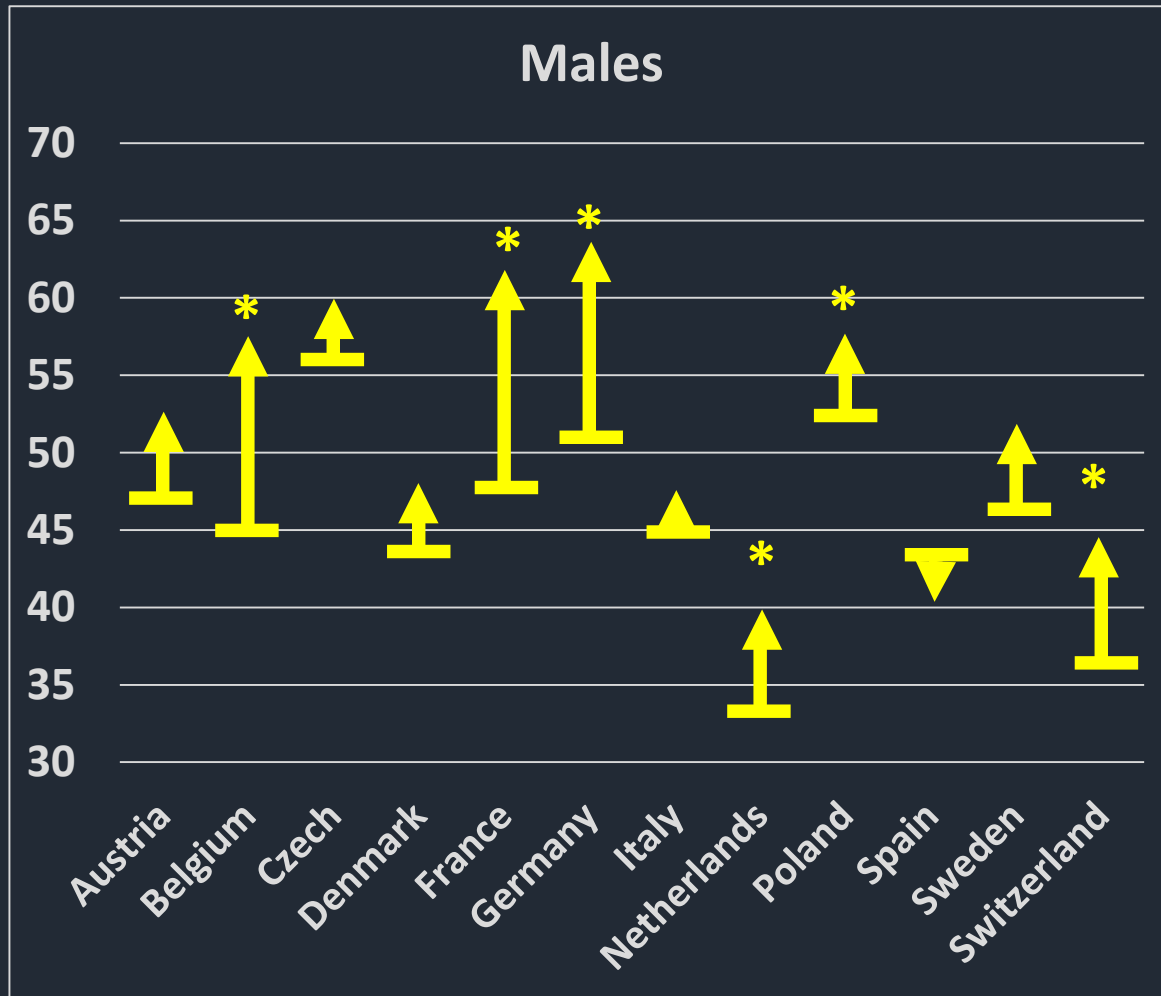
Sample sizes

| Country | 2004 | 2006 | 2011 | 2013 | 2015 |
|-------------|---------|-------|-------|-------|-------|
| Austria | 1,569 | | 5,255 | 4,382 | 3,402 |
| Belgium | 3,810 | | 5,324 | 5,640 | 5,823 |
| Czech | | 2,750 | 5,539 | 5,643 | 4,858 |
| Denmark | 1,706 | | 2,287 | 4,168 | 3,733 |
| Estonia | | | | 5,752 | 5,638 |
| France | 3,122 | | 5,851 | 4,506 | 3,948 |
| Germany | 2,997 | | 1,621 | 5,752 | 4,412 |
| Israel | | | | 2,599 | 2,035 |
| Italy | 2,553 | | 3,595 | 4,750 | 5,313 |
| Luxembourg | | | | 1,610 | 1,564 |
| Netherlands | 2,968 | | 2,789 | | |
| Poland | | 2,466 | 1,733 | | |
| Slovenia | | | | 2,958 | 4,224 |
| Spain | 2,316 | | 3,728 | 6,708 | 5,636 |
| Sweden | 3,049 | | 1,969 | 4,556 | 3,906 |
| Switzerland | 997 | | 3,788 | 3,051 | 2,806 |
| Average N | 2,525 | | 3,623 | 4,434 | 4,092 |
| Total N | 193,155 | | | | |

Aggregated prevalence

| | Males | Females |
|-----------------------------------|-------|---------|
| Site specific pain (2004, 06, 11) | 48% | 59% |
| | | |
| General pain (2013, 15) | 37% | 50% |
| Mild/moderate | 29% | 37% |
| Severe | 8% | 13% |

Trends in site specific pain, 2004/6 - 2011 (showing percentages)

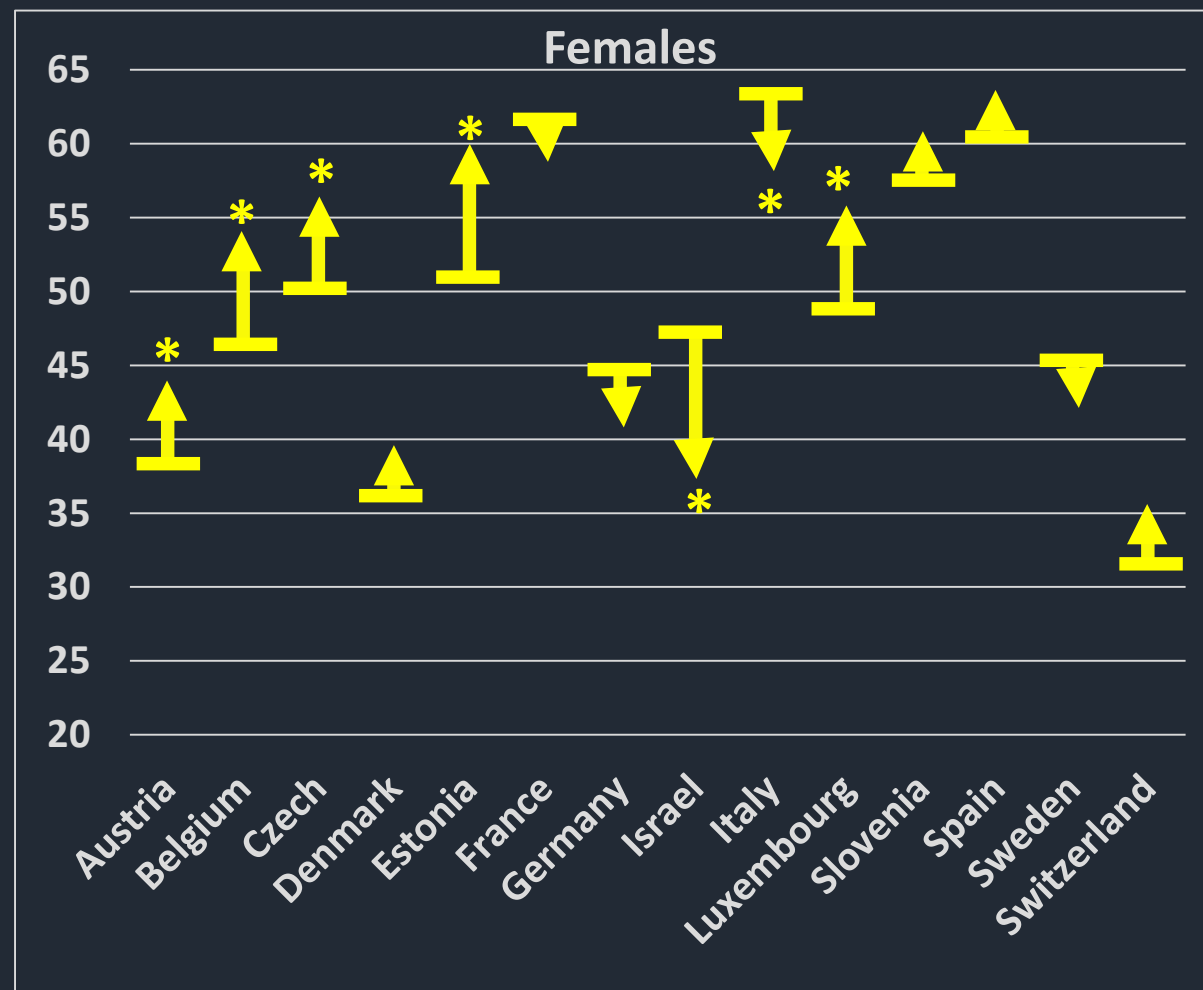
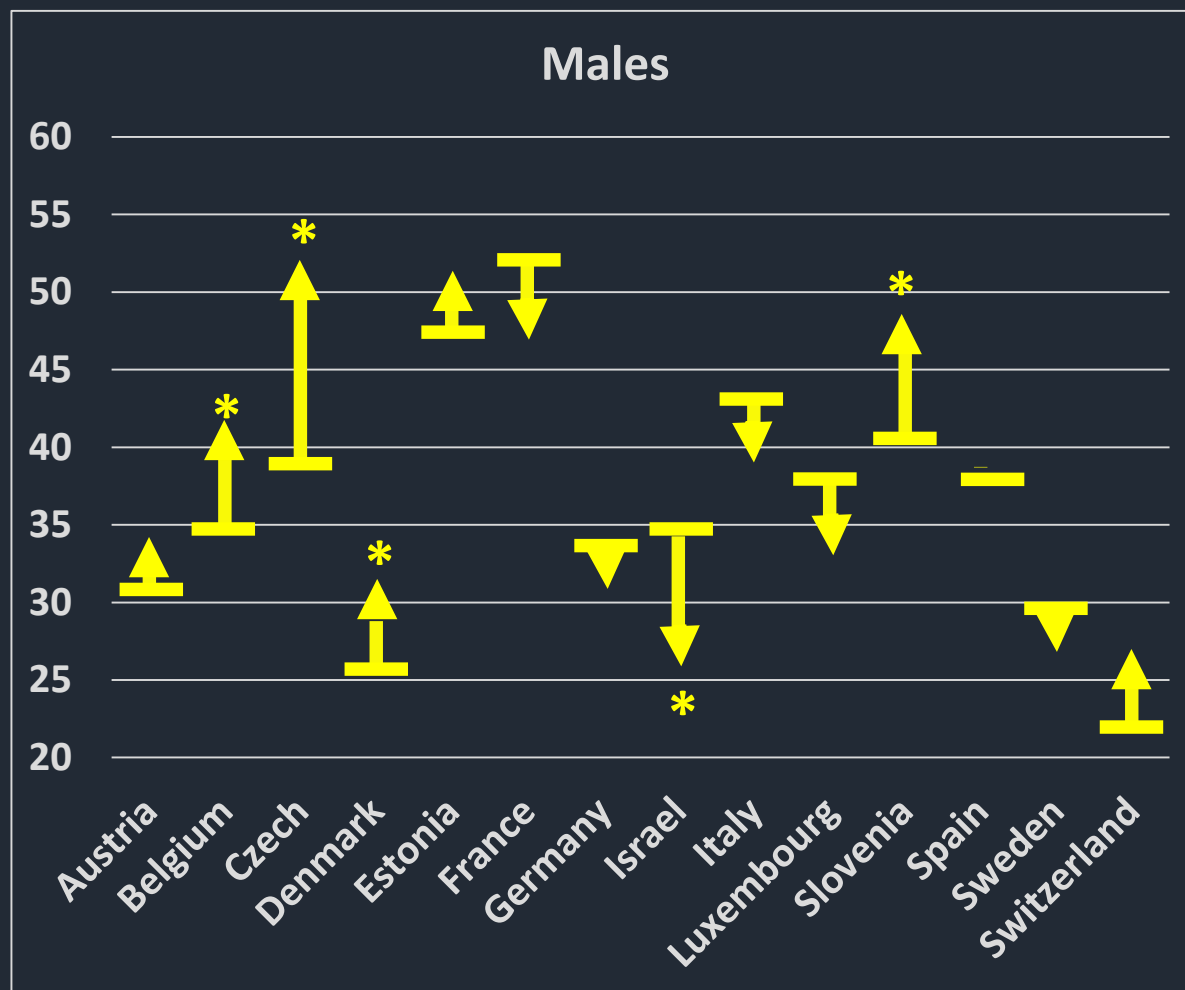


— Prevalence in 2004/6 ▲ Prevalence in 2011 * Change is significant at $p < .05$

Pooled and weighted average annual percent change

| Males | Females |
|-------|---------|
| +1.5 | +1.4 |

Trends in general pain, 2013 - 2015 (showing percentages)



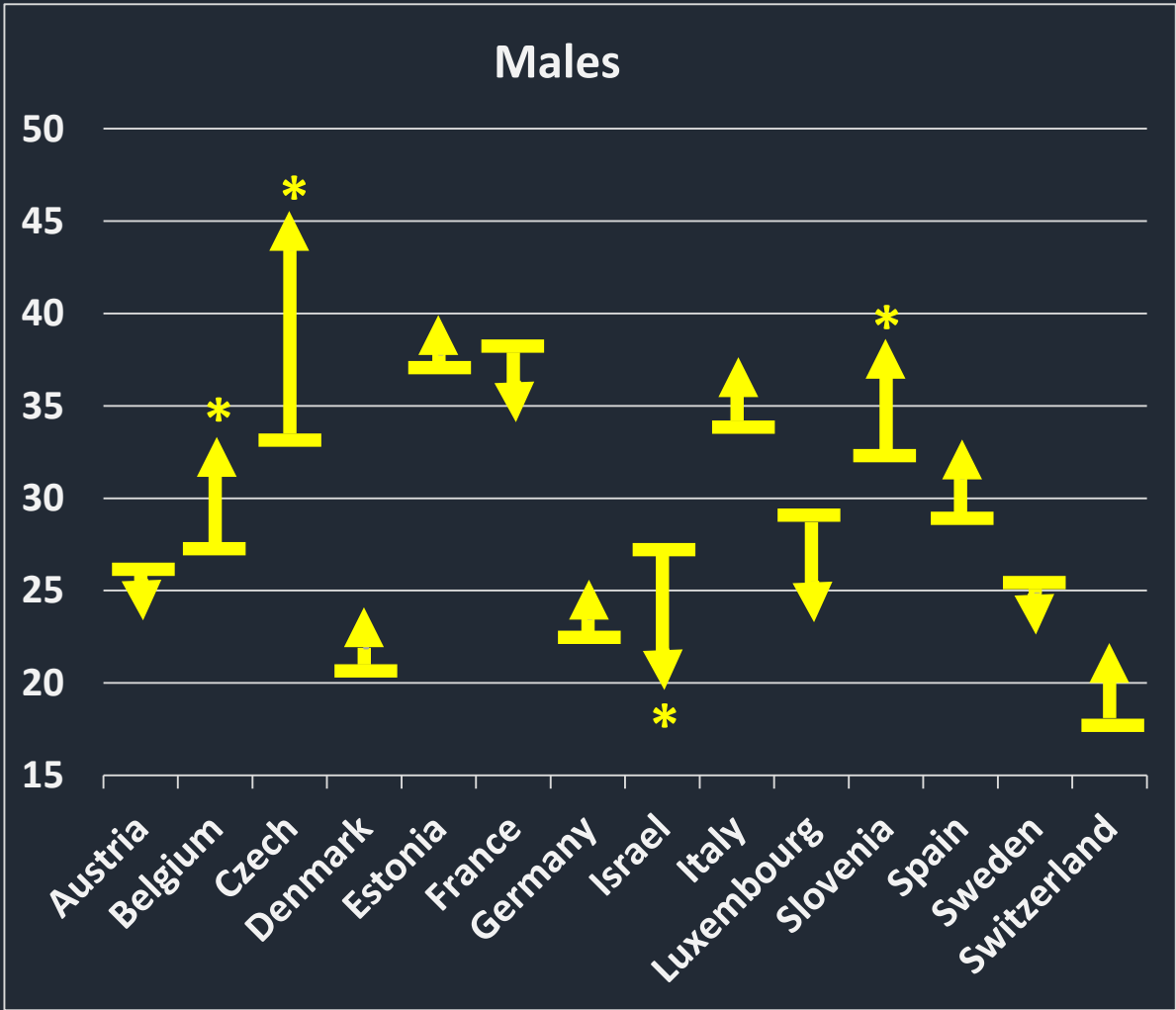
— Prevalence in 2013

▲ Prevalence in 2015

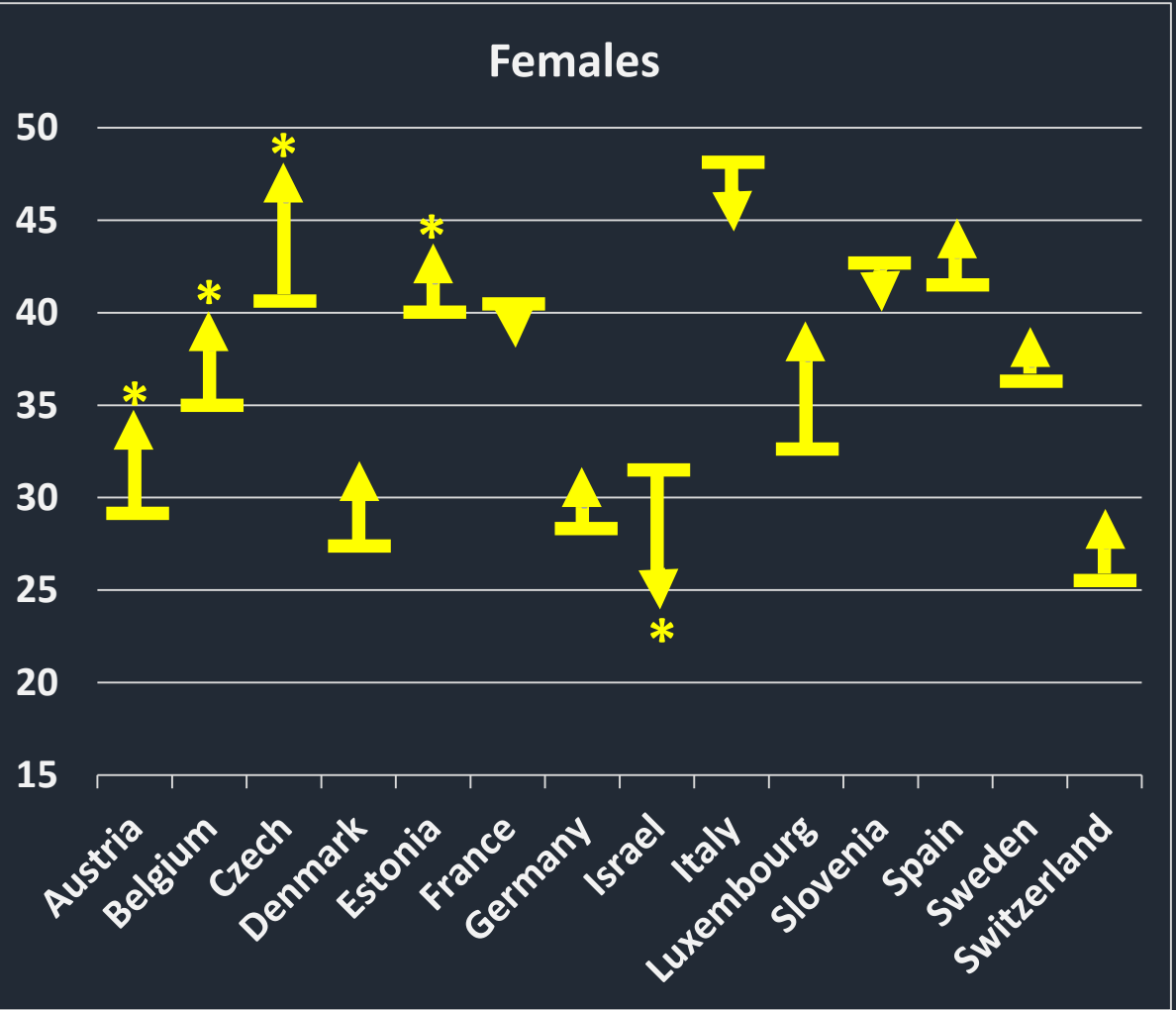
* Change is significant at $p < .05$

Trends in mild/moderate pain, 2013 – 2015 (showing percentages)

Males



Females

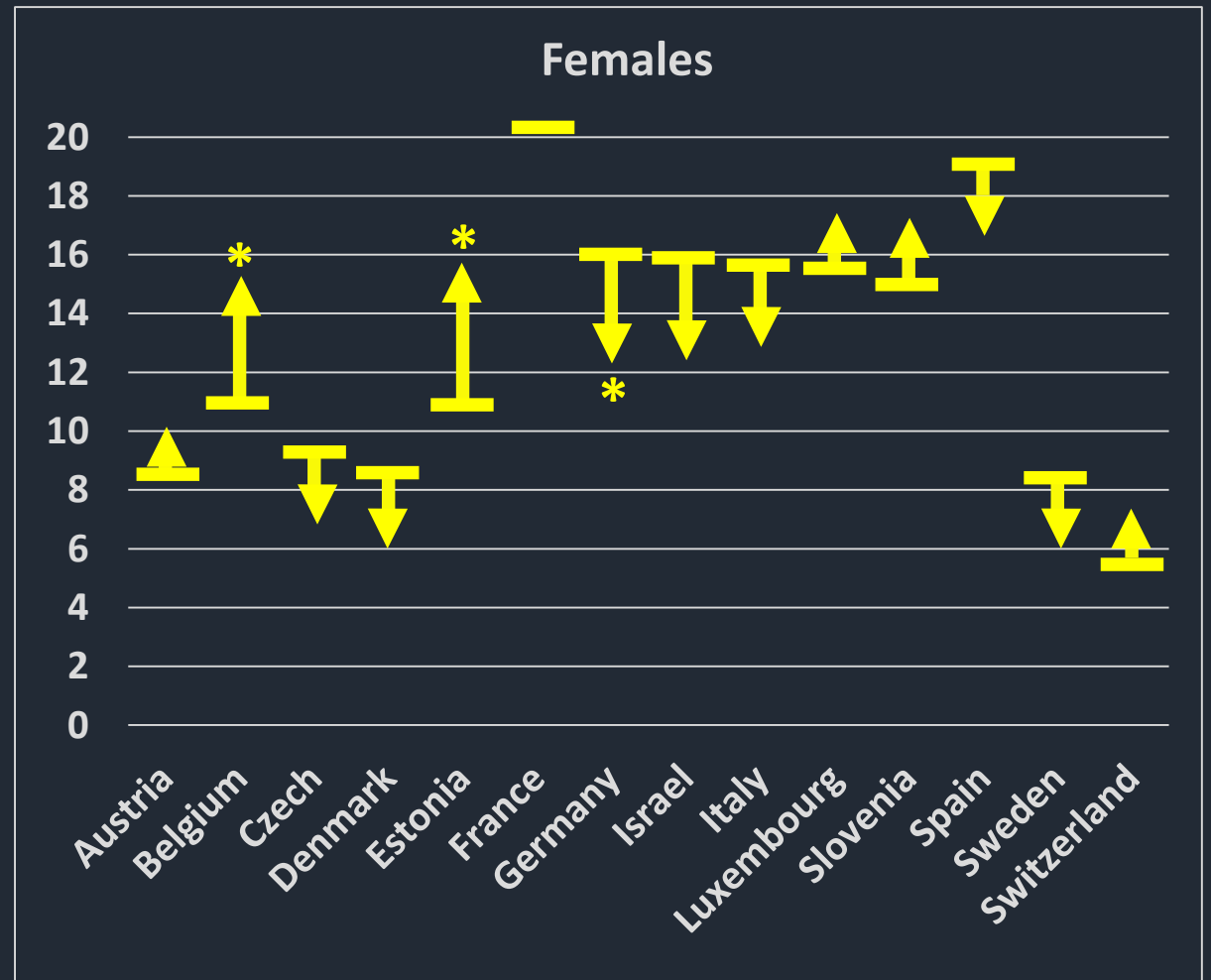
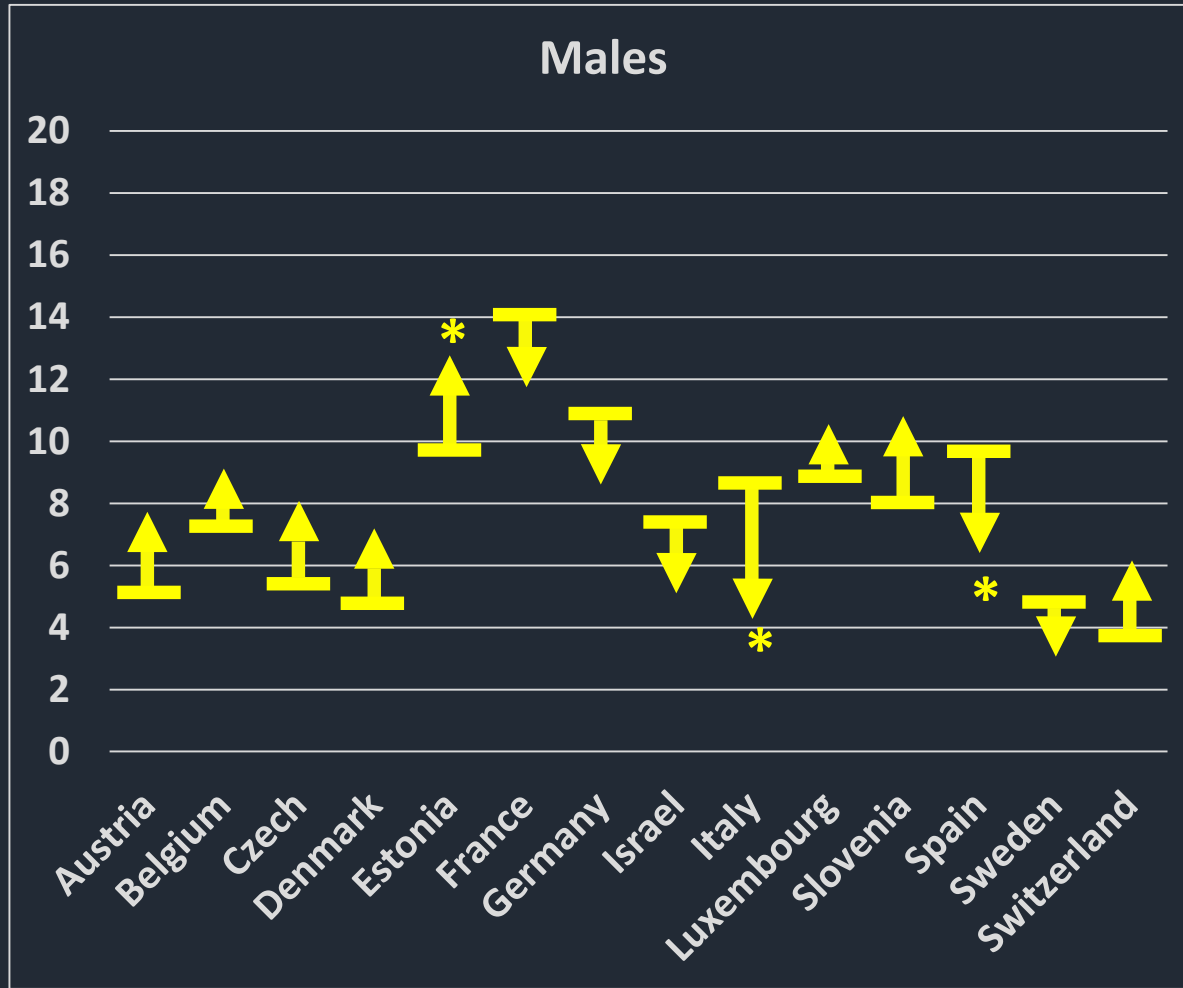


— Prevalence in 2013

▲ Prevalence in 2015

* Change is significant at $p < .05$

Trends in severe pain, 2013 – 2015 (showing percentages)



— Prevalence in 2013

▲ Prevalence in 2015

* Change is significant at $p < .05$

Pooling and weighted average annual percent change

| | Males | Females |
|---------------|-------|---------|
| Any pain | -0.4 | -0.6 |
| Mild/Moderate | +1.4 | +0.6 |
| Severe | -6.4 | -3.3 |

Multilevel logistic regression models showing odds ratios for trends and random effects

| | Model 1 | Model 2 | Model 3 | |
|---------------------------------|--------------------------------|------------------------------|--------------------------------|-------------------------|
| | 2004/6 to 2011 | 2013 to 2015 | 2013 to 2015 | |
| | Site specific vs No pain | Any general vs No pain | Mild/Moderate vs No pain | Severe vs No pain |
| Time 2 (vs Time 1) [‡] | 1.240** | 1.103* | 1.083** | 1.060 |
| Random intercept (SE) | .102 (.019) | .130 (.037) | .079(.010) | |
| Random slope (SE) | .024 (.009) | .021 (.011) | .034(.003) | |

** P < .01 * .01 < P < .05

[‡] Controls for age, sex, married, education and six chronic conditions (arthritis, heart disease, diabetes, lung disease, cancer, stroke).

Conclusion

- On balance, trends in pain prevalence in Europe, 2004/6 to 2011, resemble trends in the United States.
- There is however substantial across country variation.
- Trends from 2013 to 2015 are not clear.

Canadian Community Health Survey (CCHS)



Nationally-representative repeated cross-sectional survey

10 waves of data from 2001 to 2014.

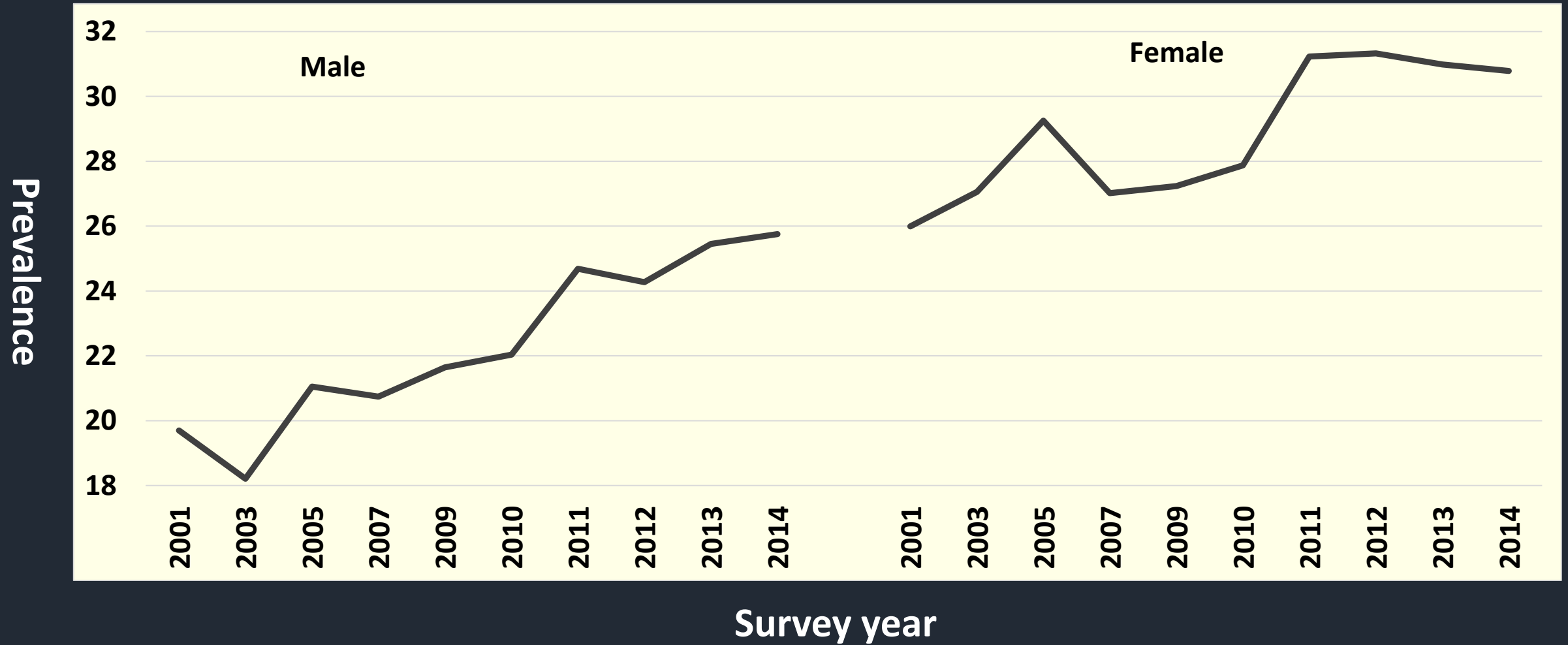
Pain question: “Are you usually free of pain or discomfort?”

Age 45 to 80+

N=550,000

26% report pain or discomfort

Prevalence of any pain or discomfort, 2001 - 2014



Is this a global phenomenon?

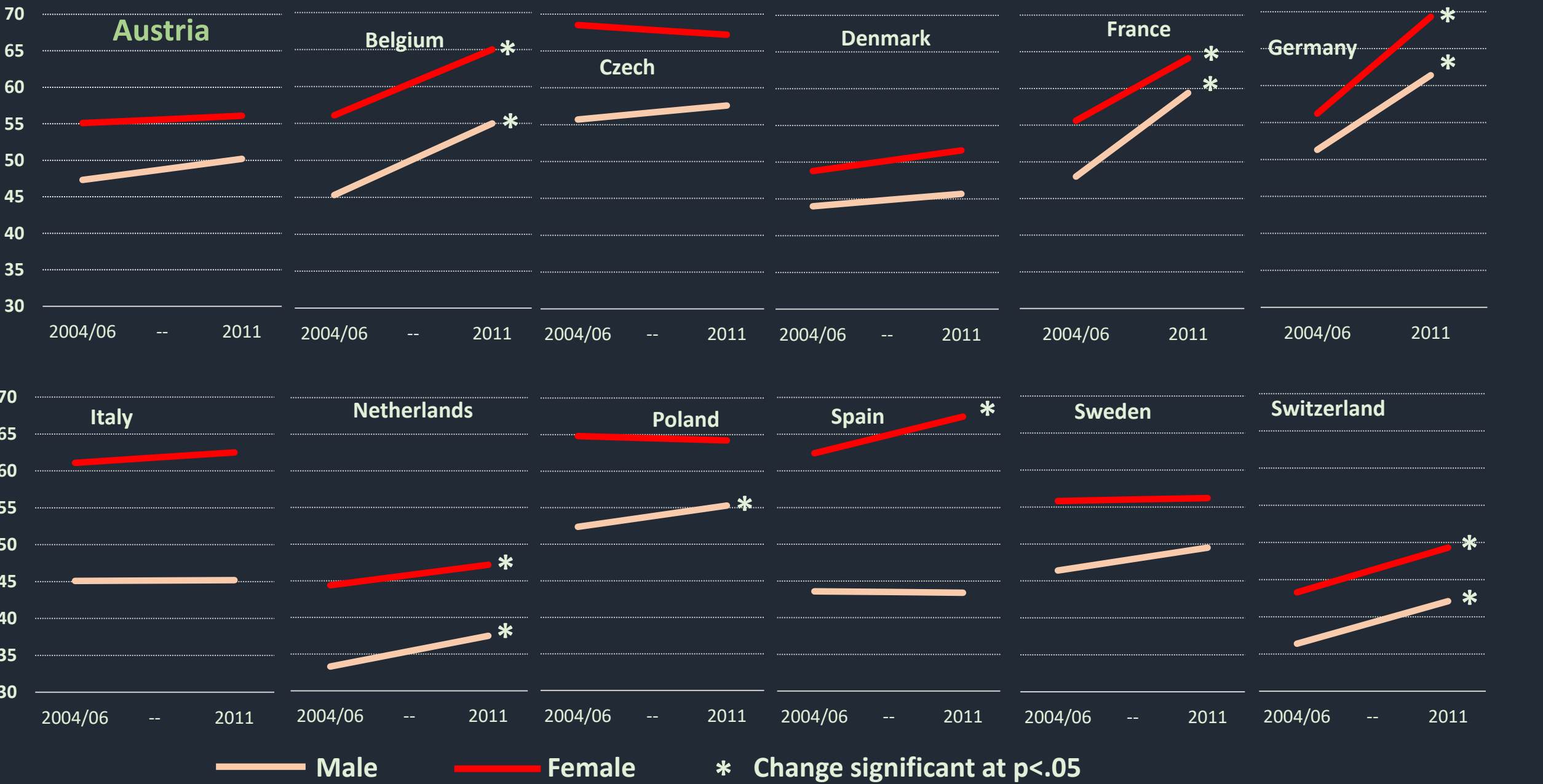


Thank you

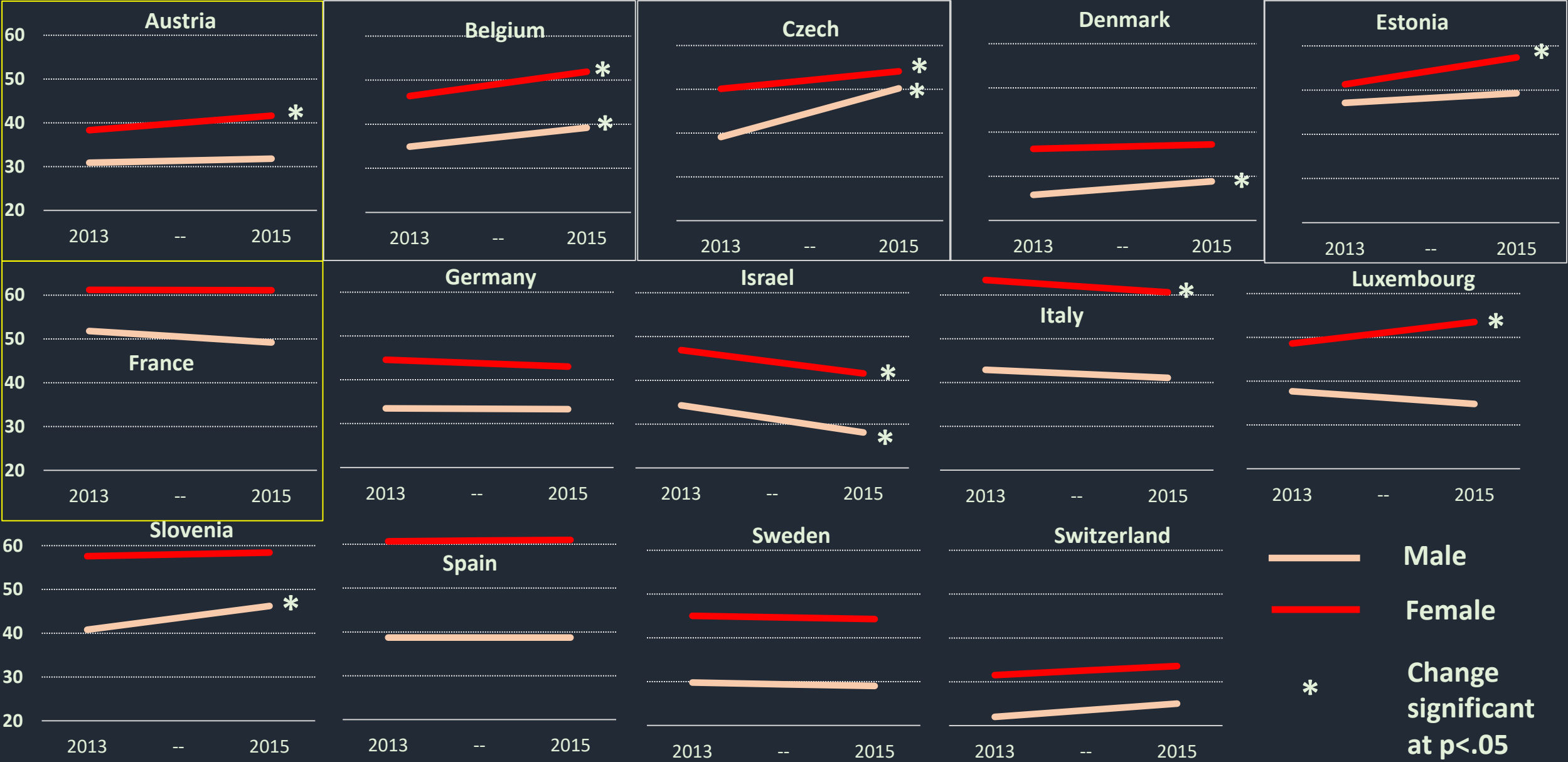
Email me at: zachary.zimmer@msv.uc for a copy of our forthcoming paper in *Journals of Gerontology: Social Sciences*.

Zachary Zimmer acknowledges support of the Social Sciences and Humanities Research Council through the Canada Research Chairs program.

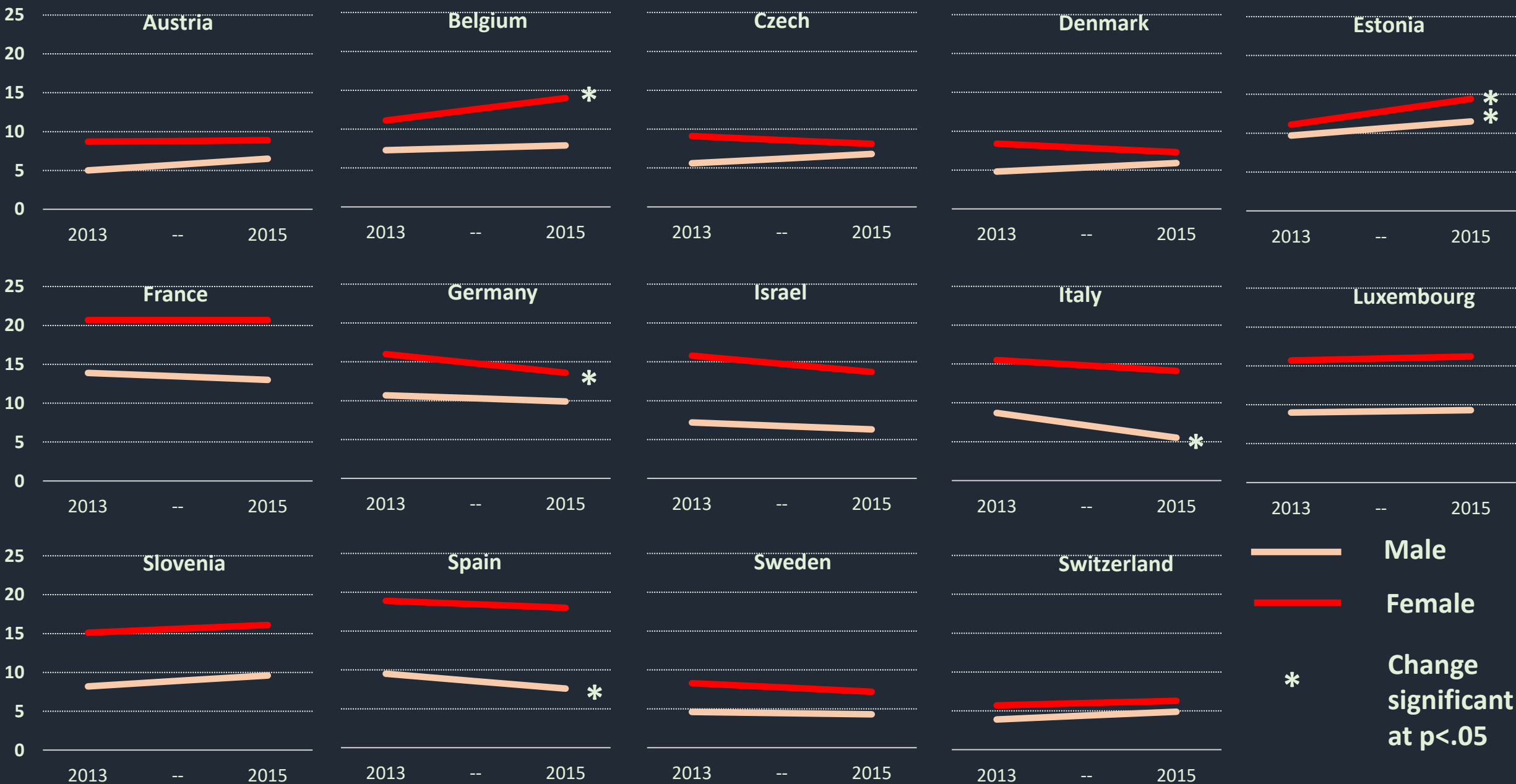
Percent of Males and Females With Specific Pain by Year and Country, 2004/06-2011



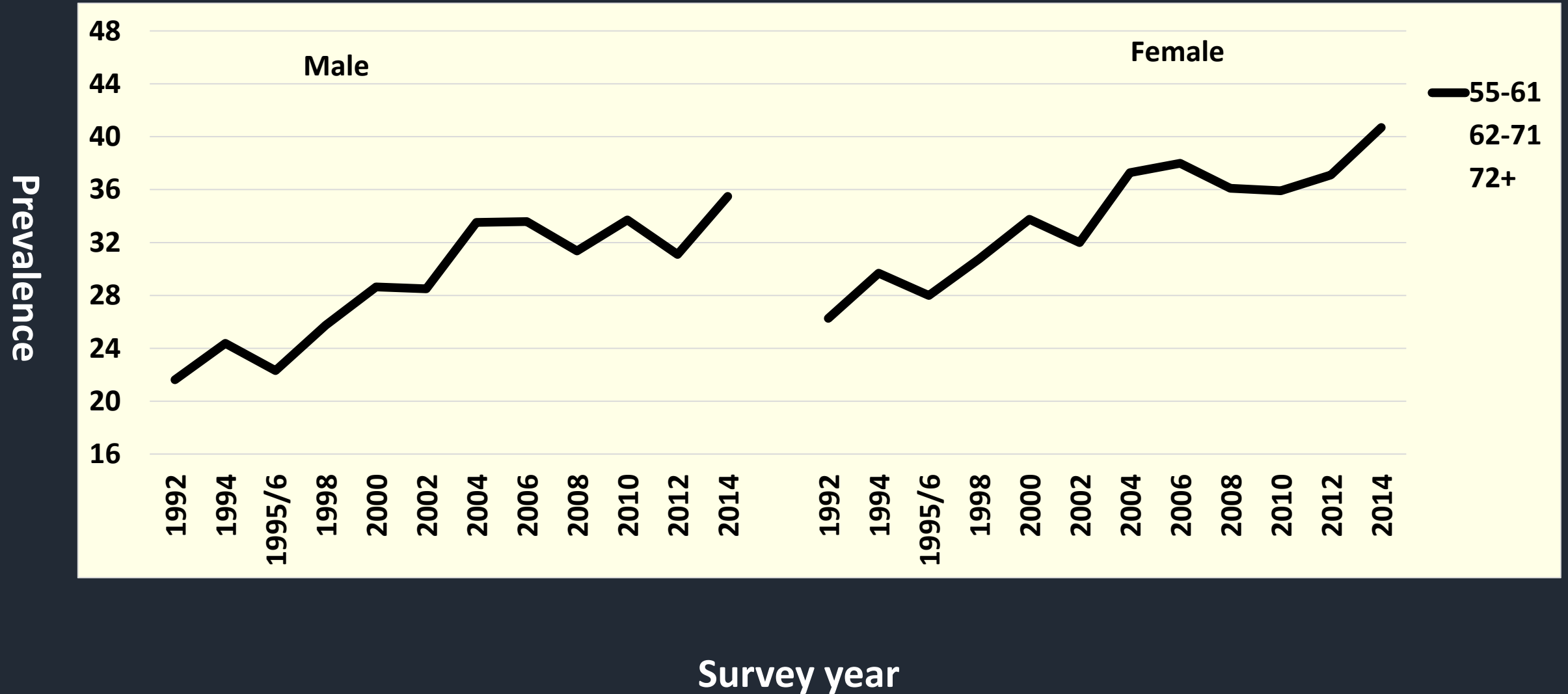
Percent of Males and Females With Chronic Pain by Year and Country, 2013-2015



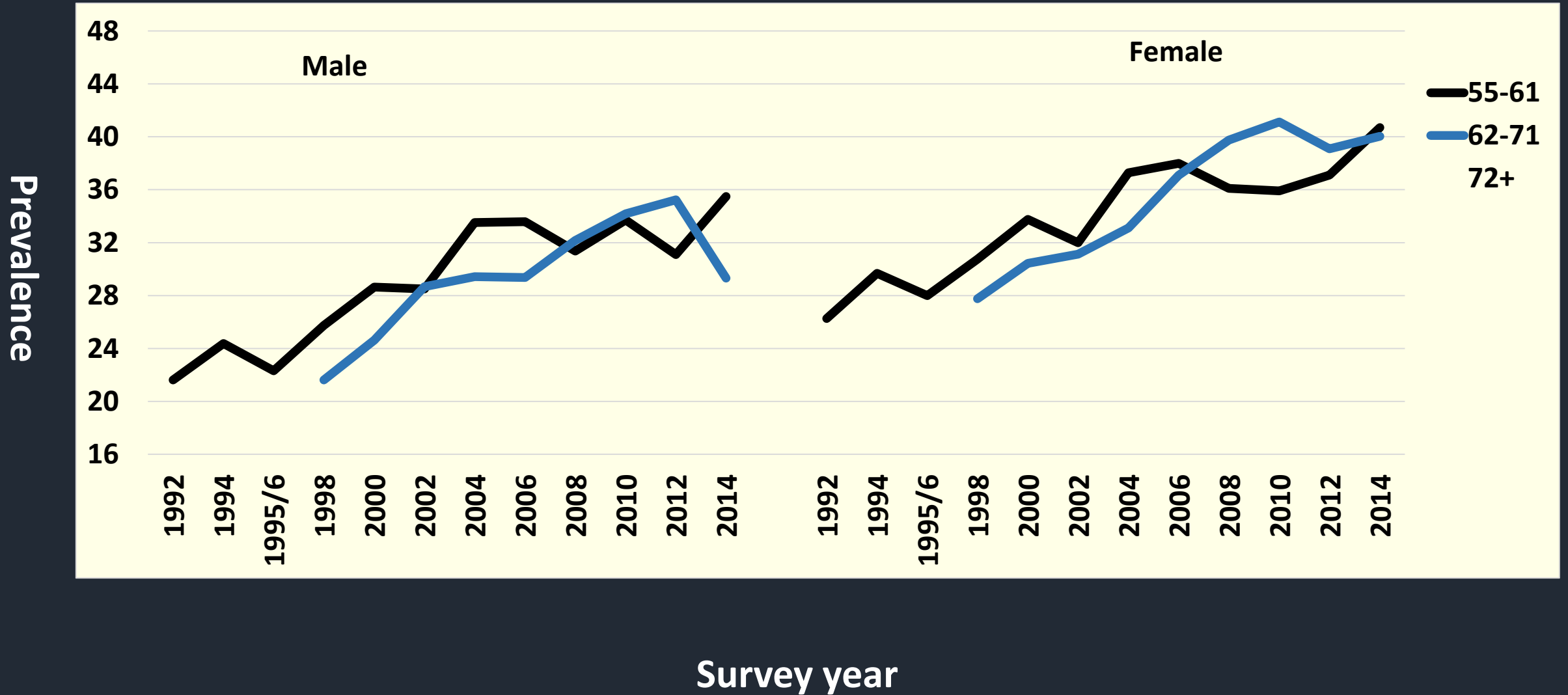
Percent of Males and Females With Severe Chronic Pain by Year and Country, 2013-2015



Prevalence of pain of any severity by year, age and sex



Prevalence of pain of any severity by year, age and sex



Aggregated prevalence, 1992-2014

| | Males | Females |
|---------------------------------|-------|---------|
| Any pain | 28.7 | 35.0 |
| Mild/moderate non-limiting pain | 11.0 | 10.7 |
| Severe and/or limiting pain | 17.7 | 24.3 |