

**Supplementary Note**

**National and regional seasonal dynamics of all-cause and cause-specific mortality in the USA from 1980 to 2016**

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<sup>3</sup> WHO Collaborating Centre on NCD Surveillance and Epidemiology, Imperial College London, London, United Kingdom, W2 1PG

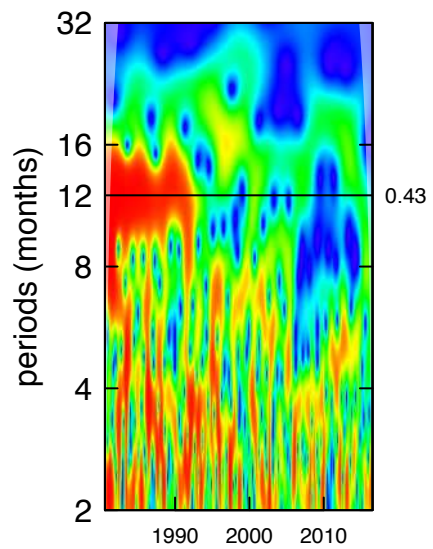
<sup>4</sup> Institute for Health Metrics and Evaluation, University of Washington, Seattle, USA, WA 98121

<sup>5</sup> Space and Atmospheric Physics, Imperial College London, London, United Kingdom, W7 2AZ

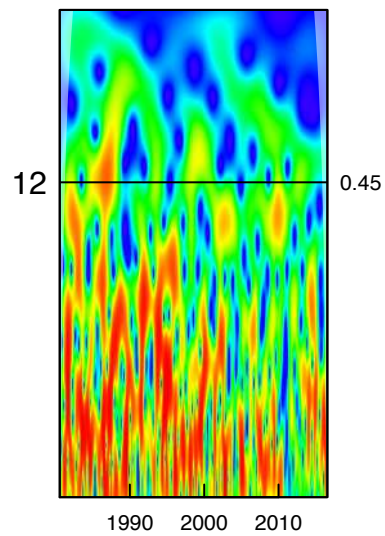
16 **Supplementary Figure 1:** Wavelet power spectra for national time series of additional cause-  
17 specific death rates for 1980-2016, by sex and age group for (A) males and (B) females.  
18 Wavelet power values increase from blue to red. The shaded regions at the left and right edge  
19 of each box indicate the cone of influence, where spectral analysis is less robust. P-values for  
20 the presence of 12-month seasonality are to the right of each figure at the 12-month line.

# Male cardiovascular diseases

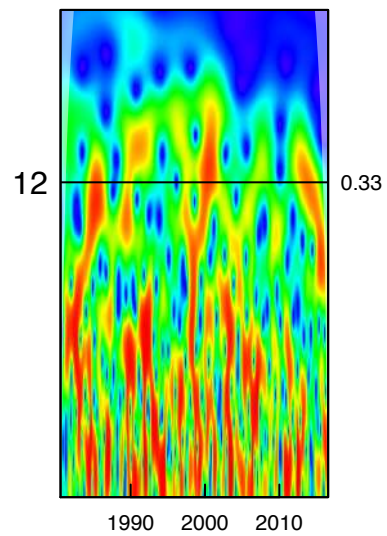
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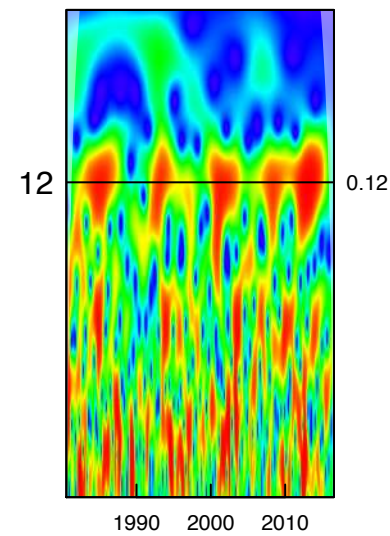
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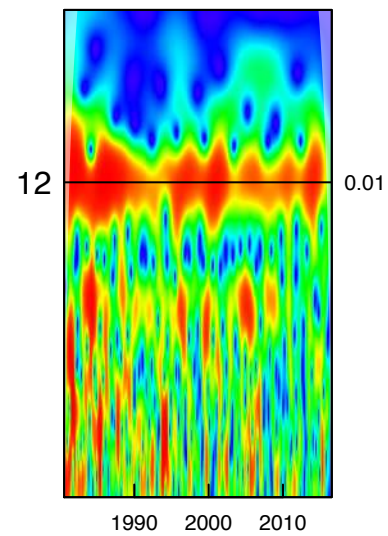
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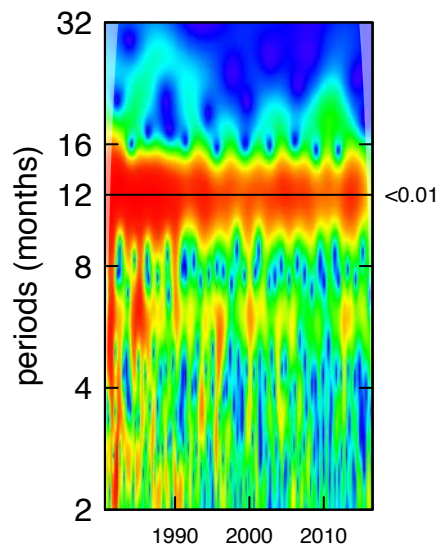
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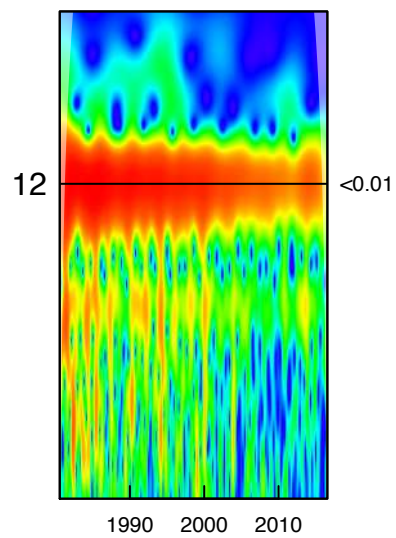
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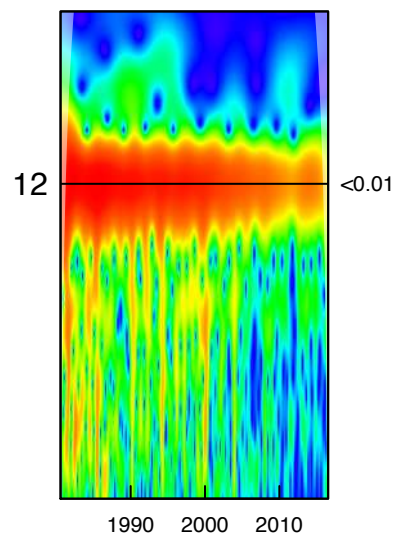
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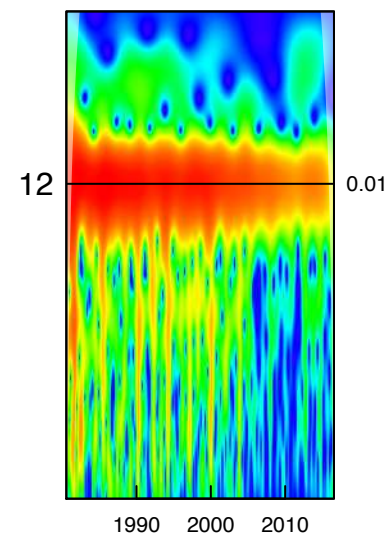
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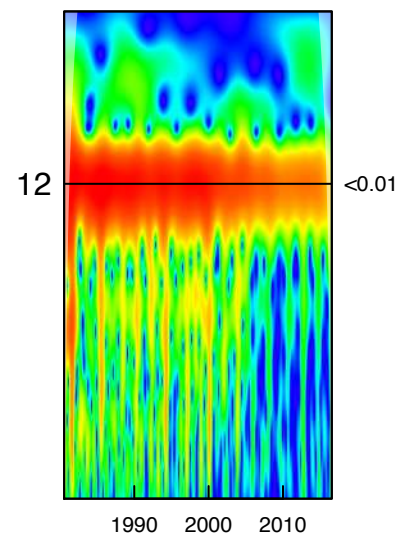
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# Female cardiovascular diseases

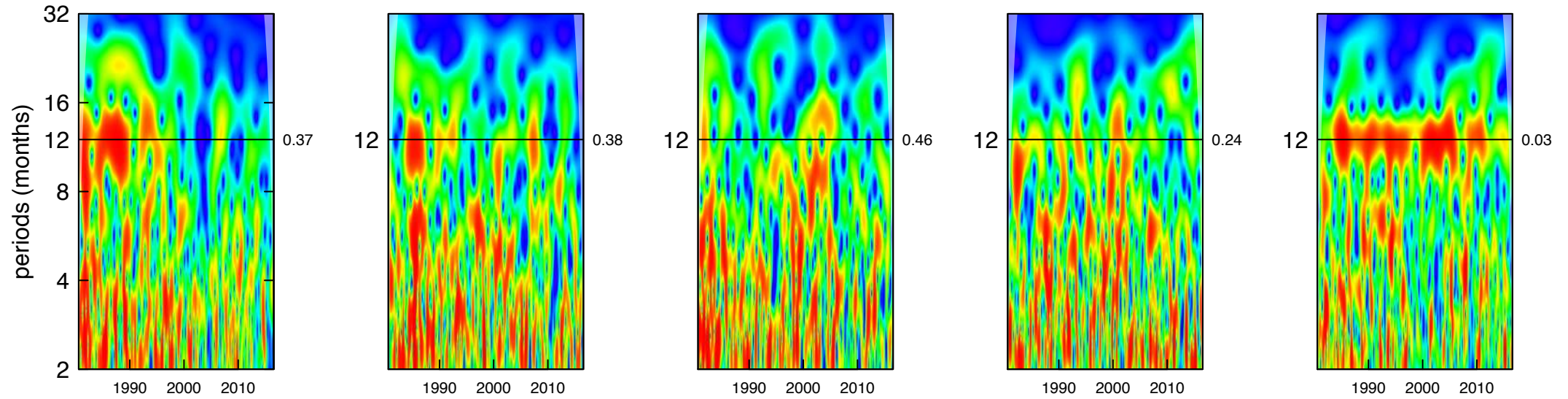
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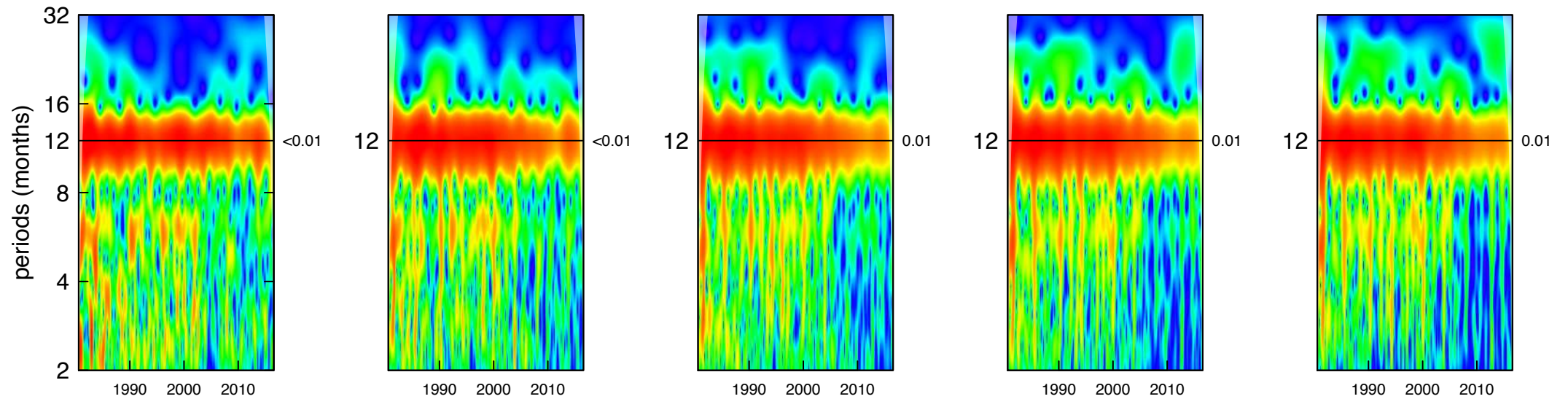
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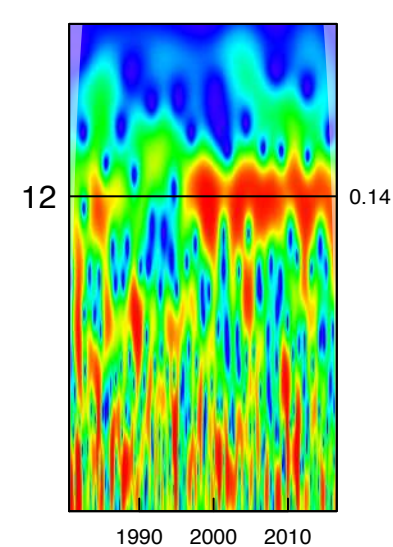
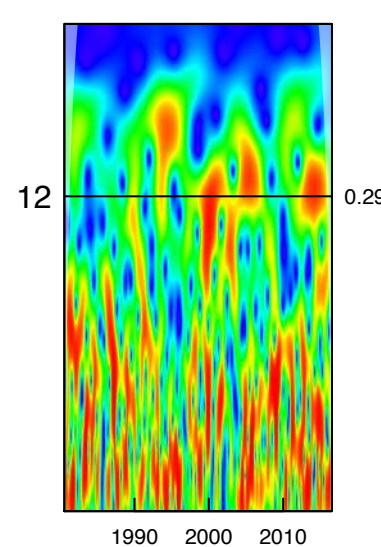
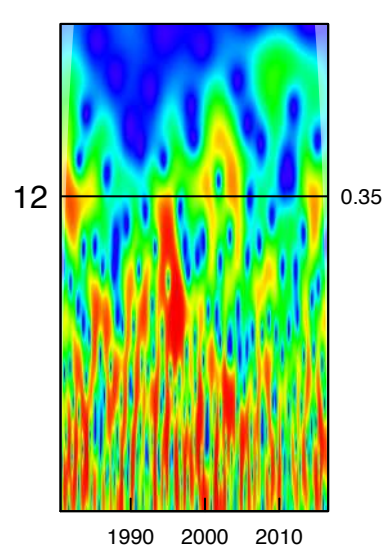
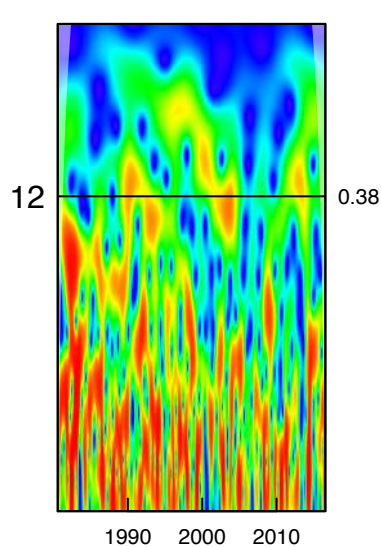
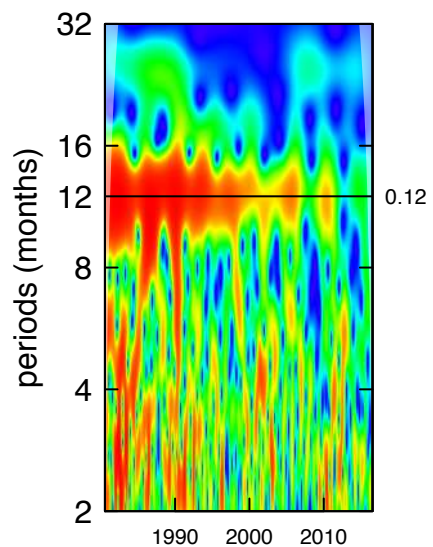
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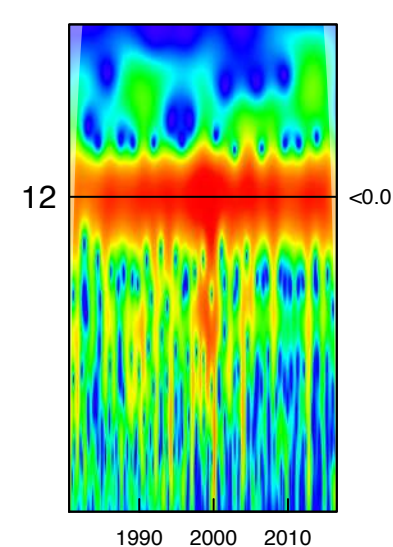
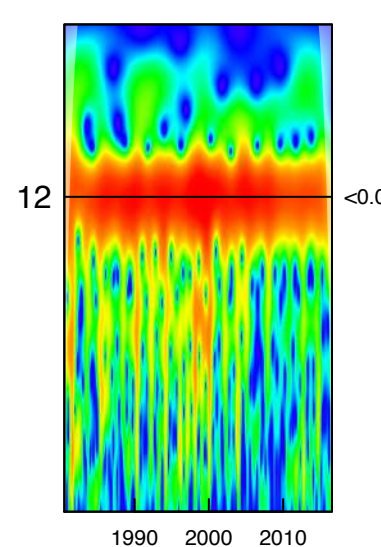
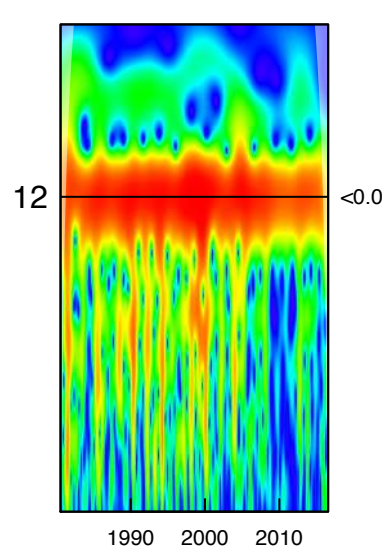
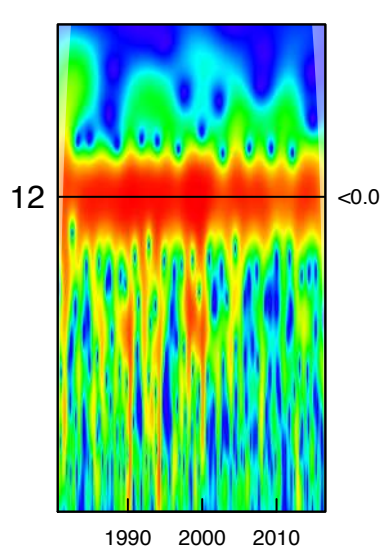
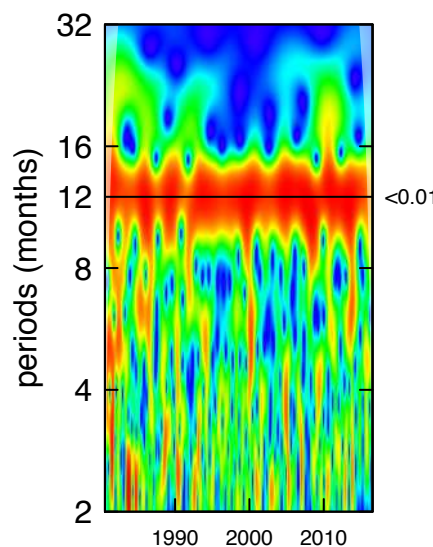
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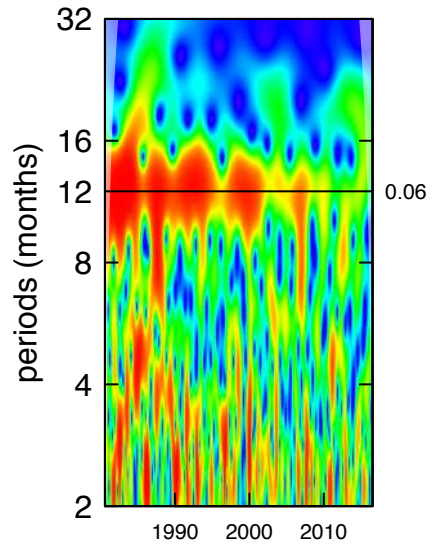
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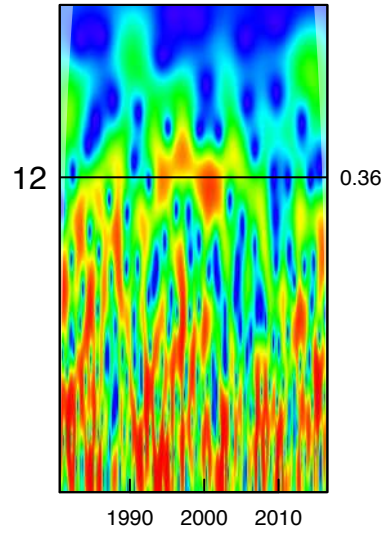


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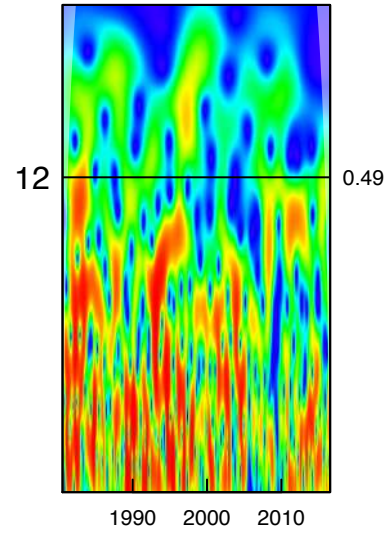
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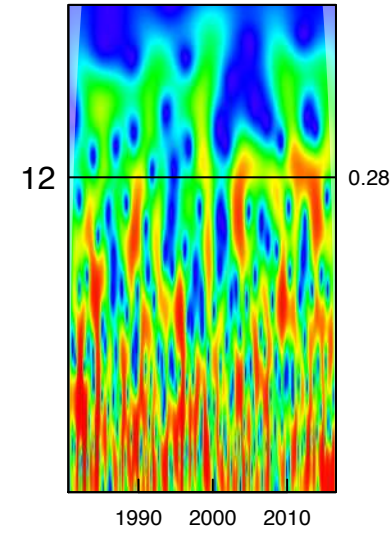
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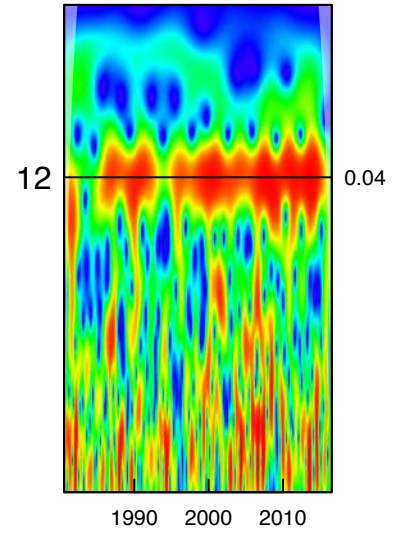
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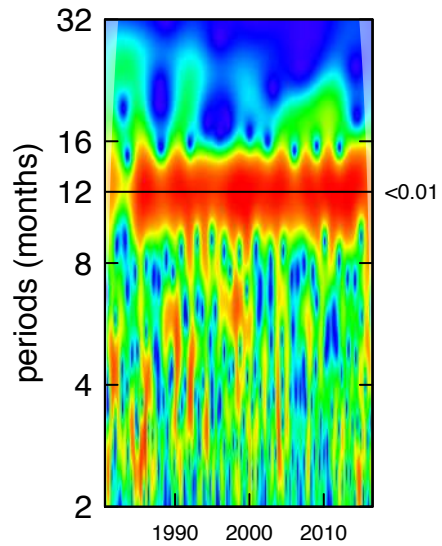
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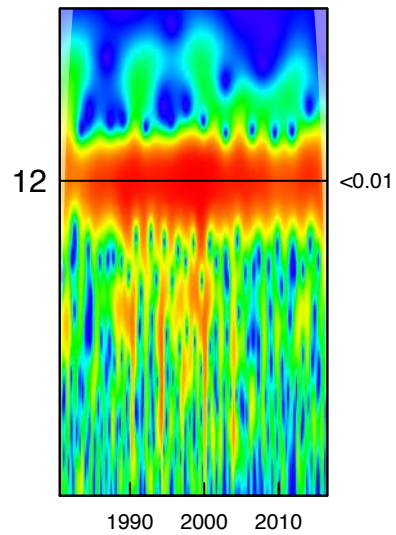
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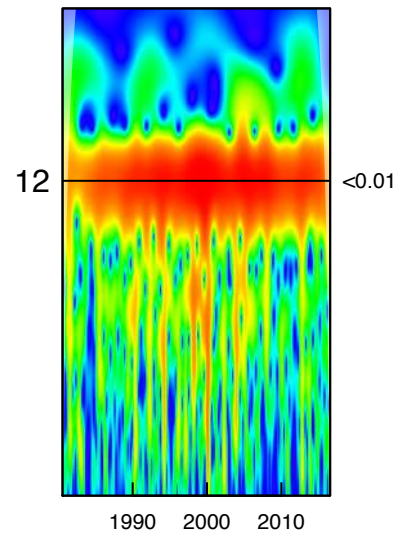
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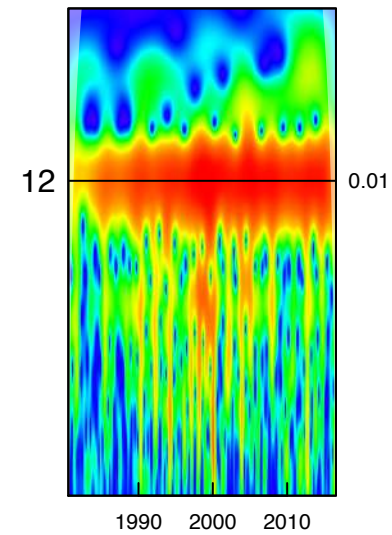
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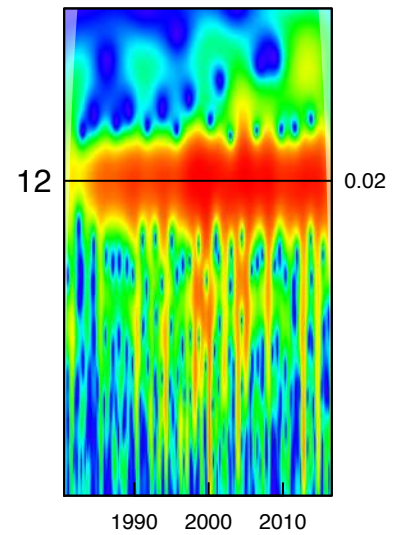
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# Male respiratory infections

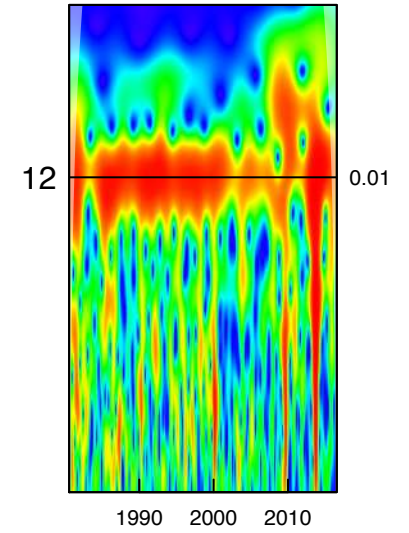
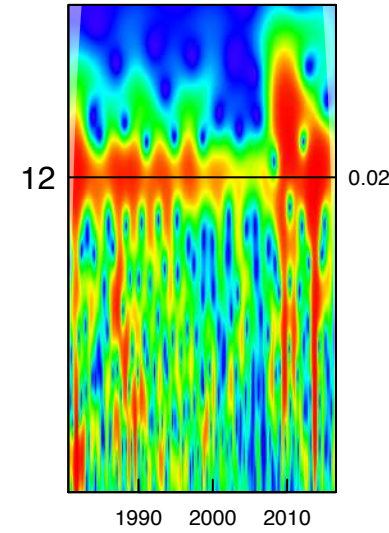
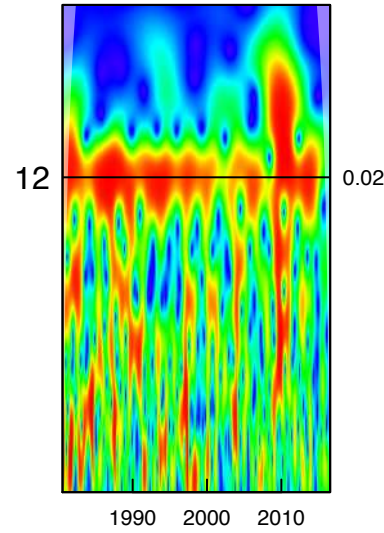
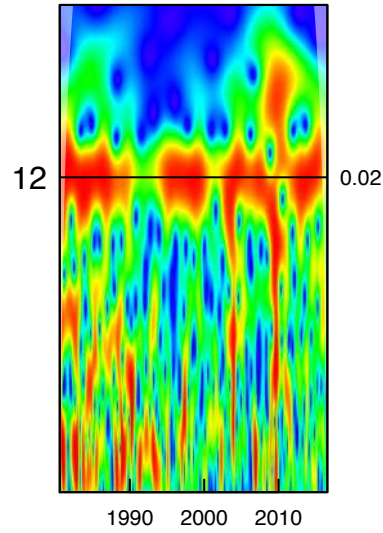
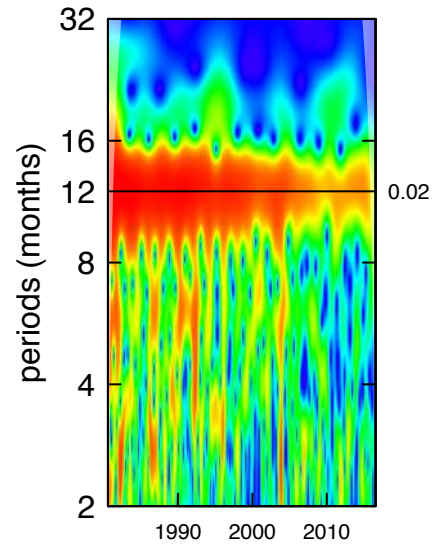
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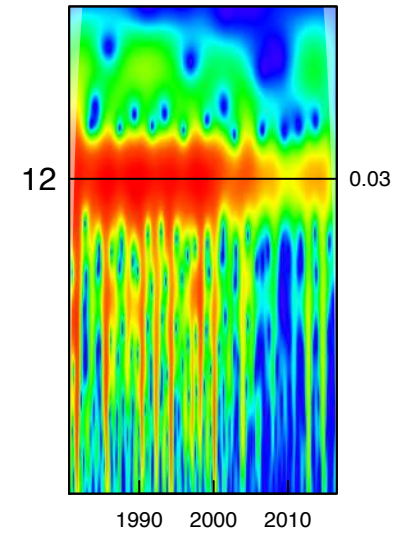
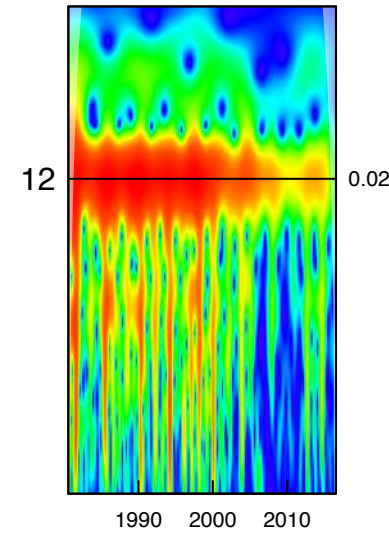
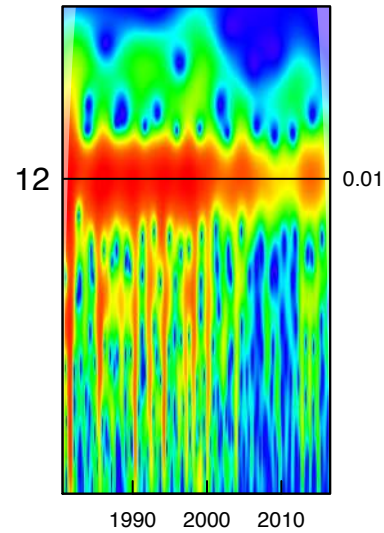
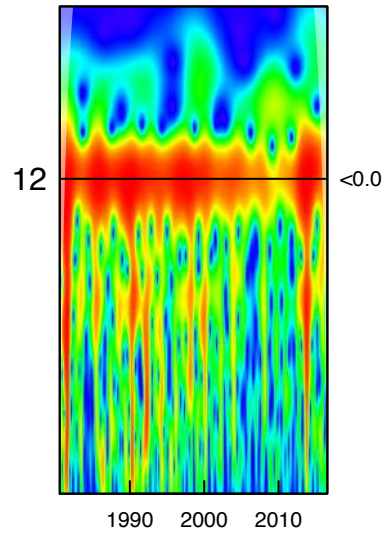
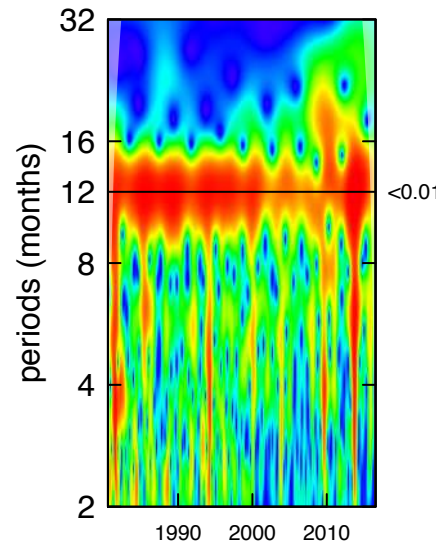
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# Female respiratory infections

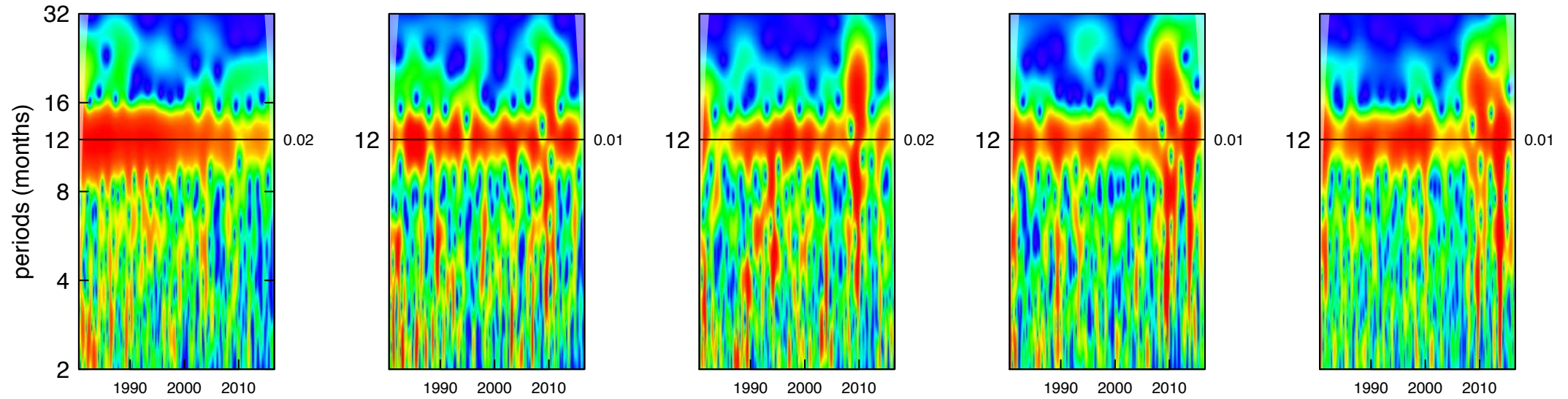
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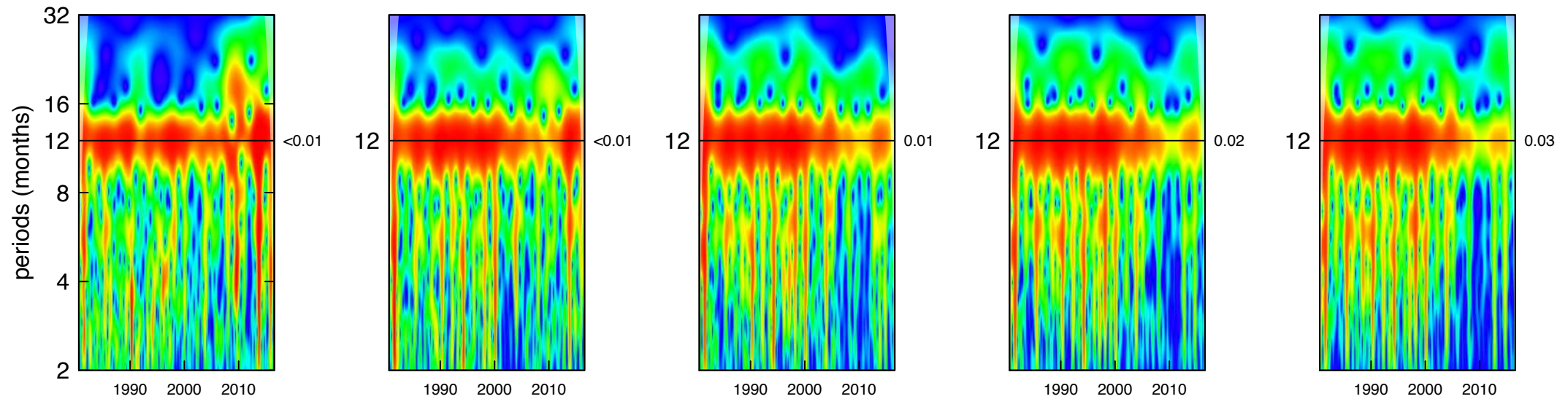
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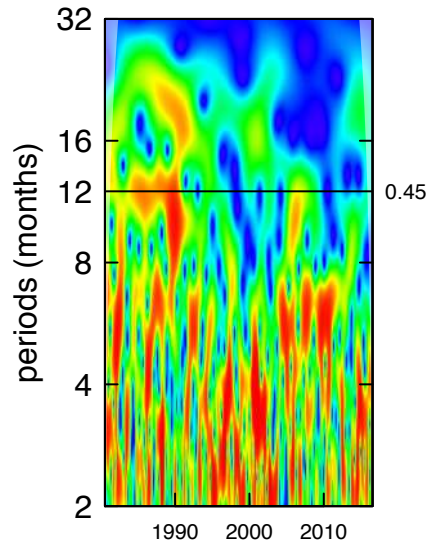
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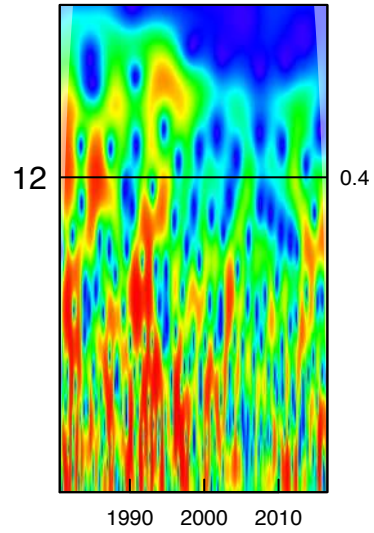


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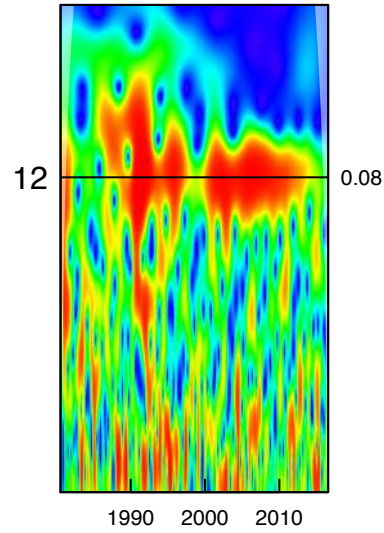
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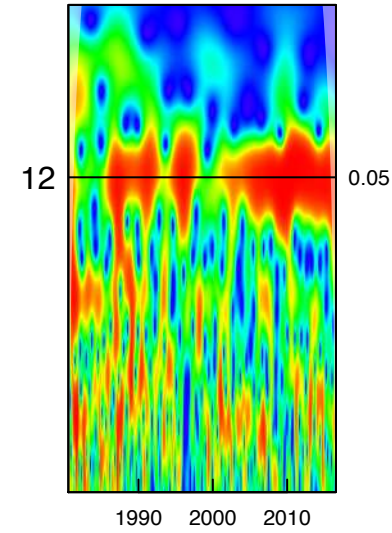
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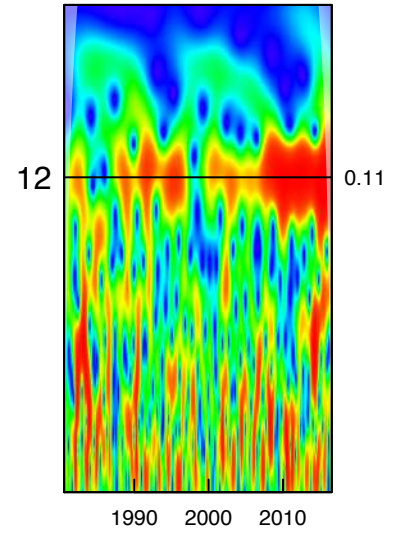
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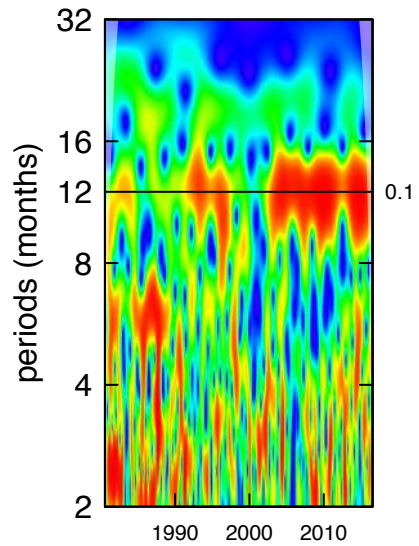
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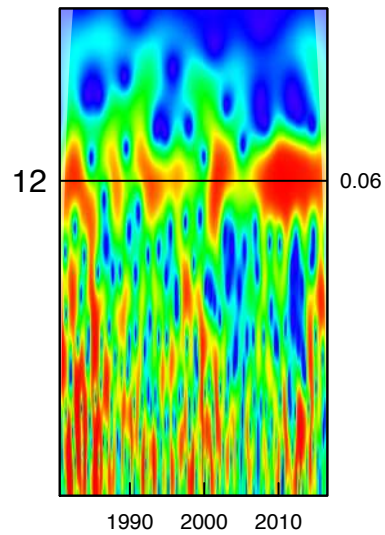
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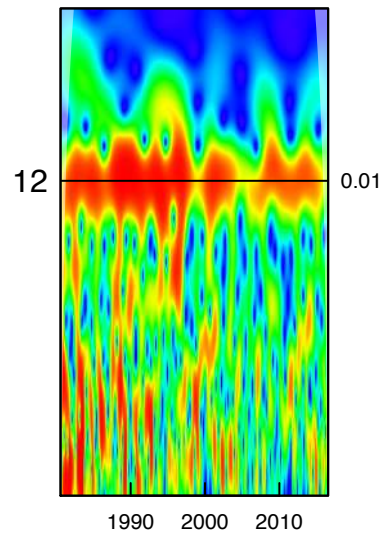
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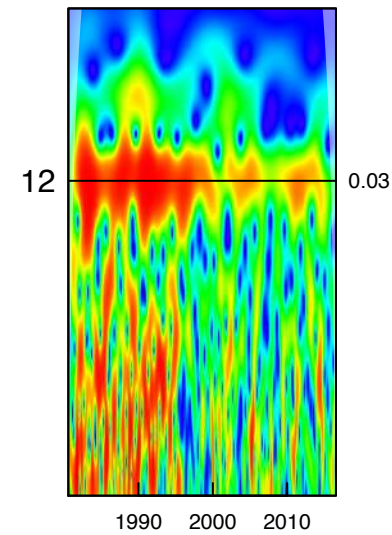
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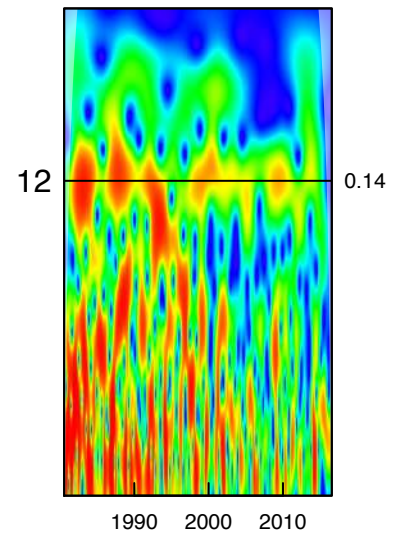
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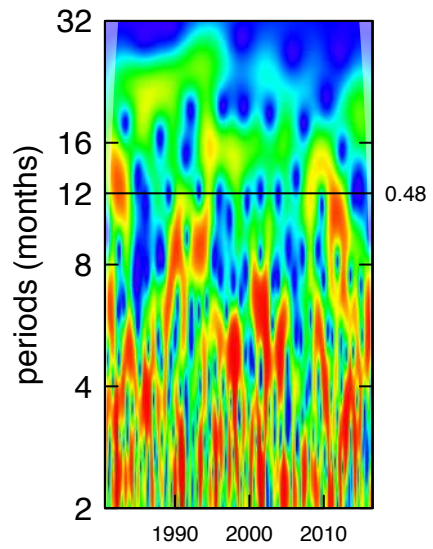


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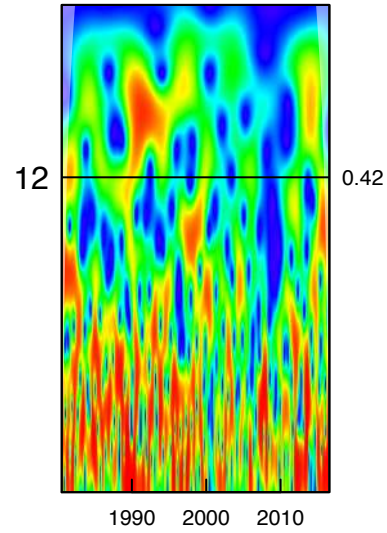


# Female intentional injuries

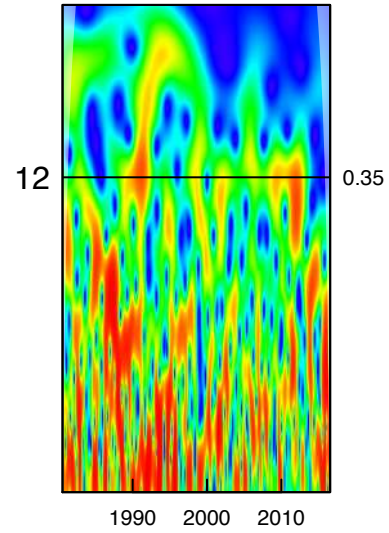
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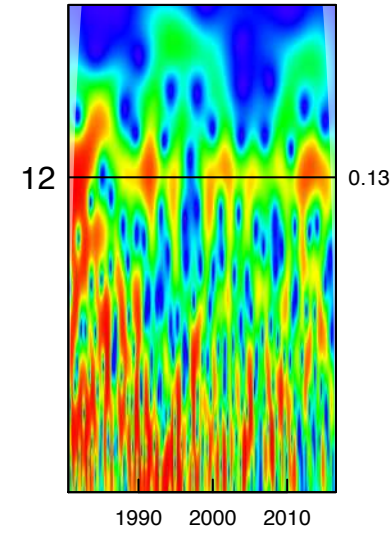
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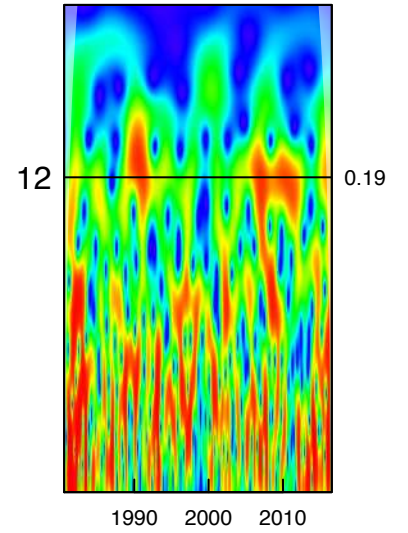
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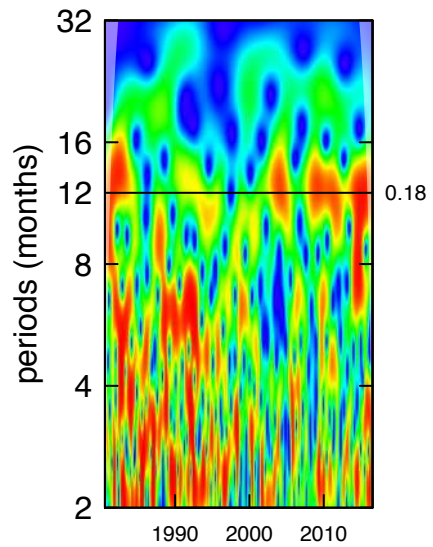
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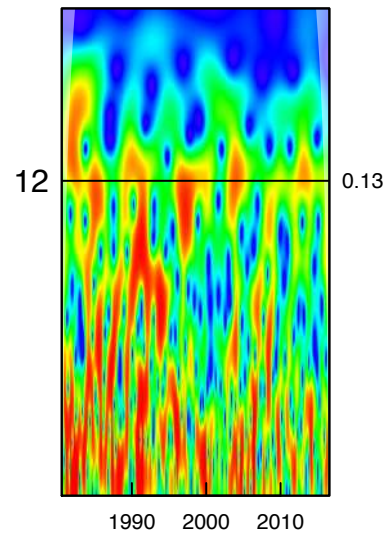
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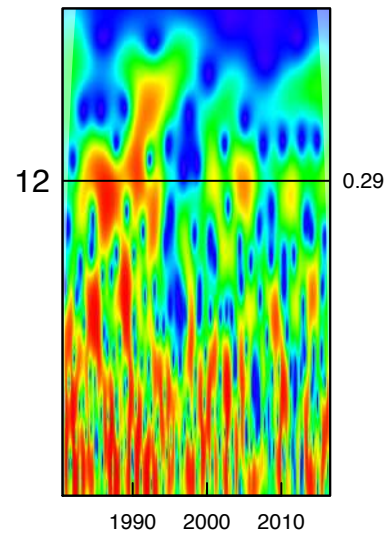
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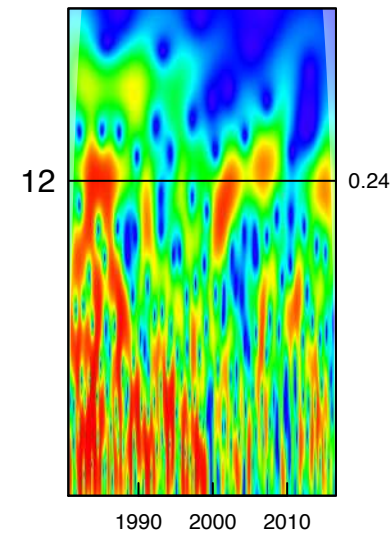
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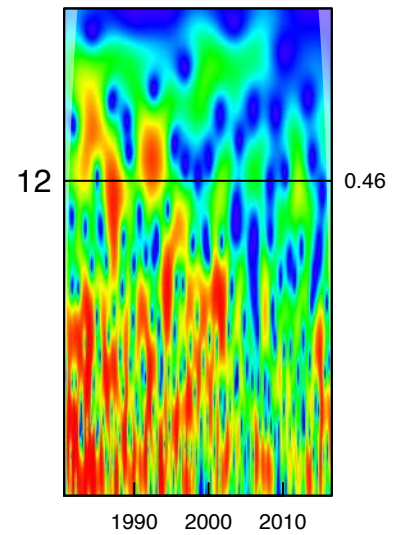
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# Male unintentional injuries

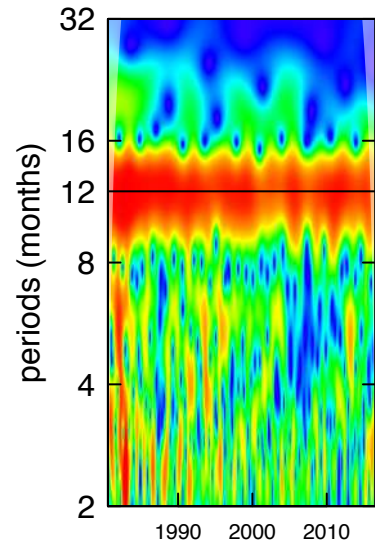
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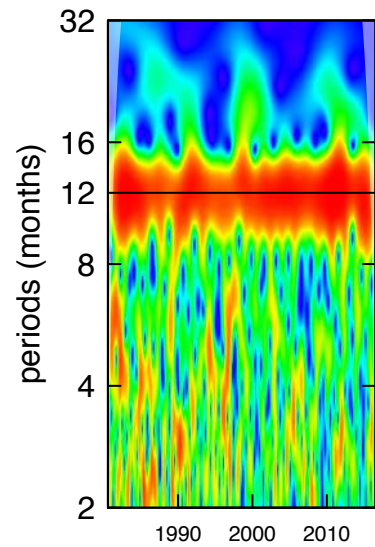
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# Female unintentional injuries

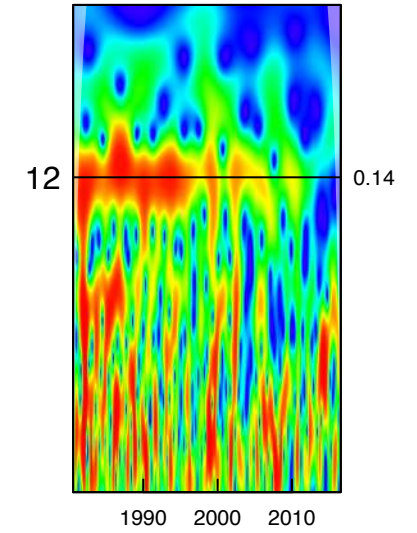
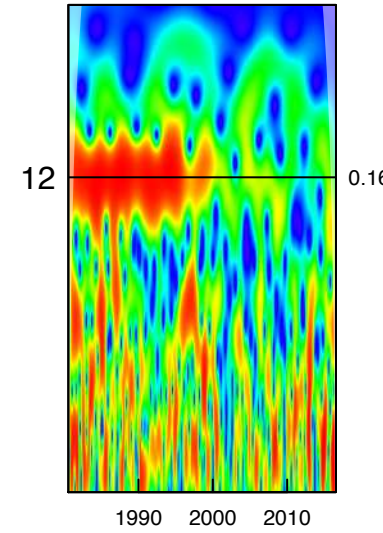
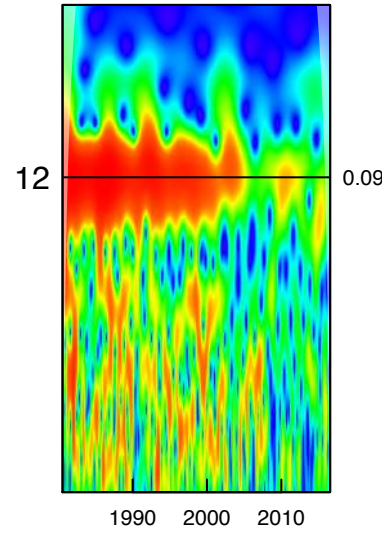
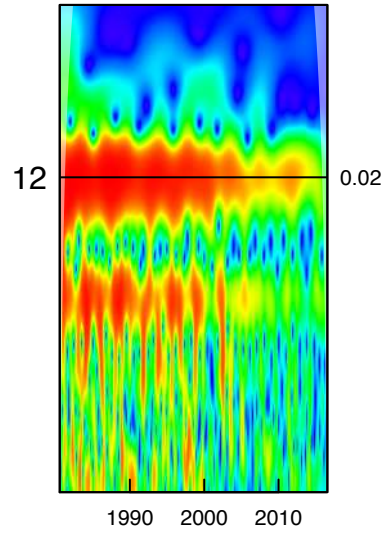
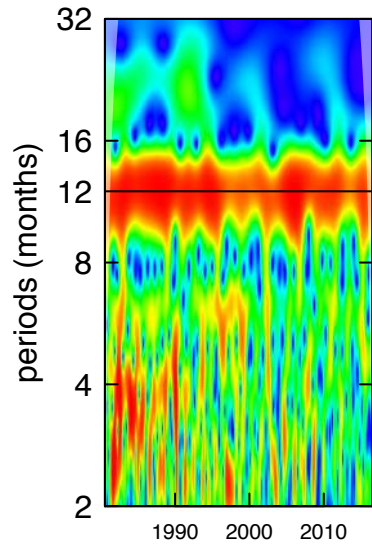
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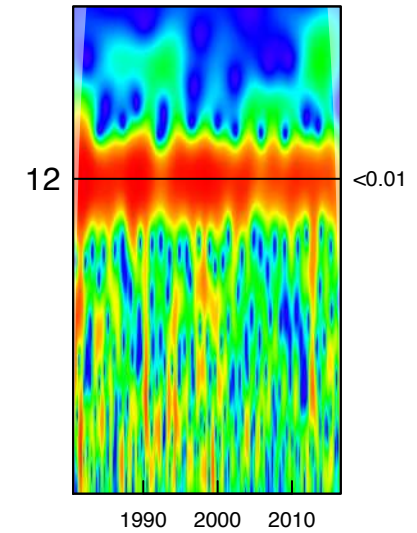
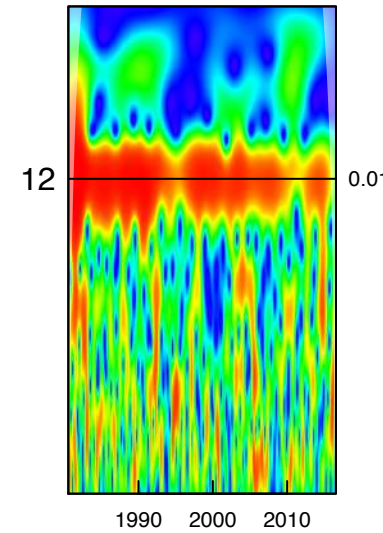
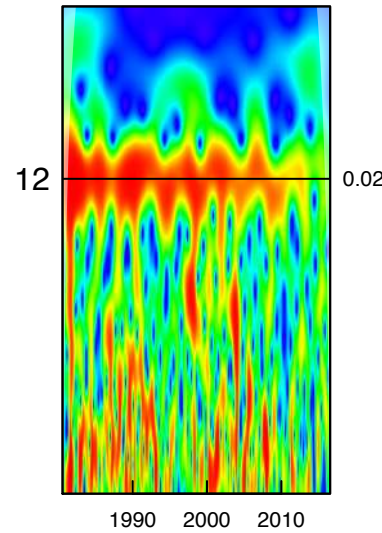
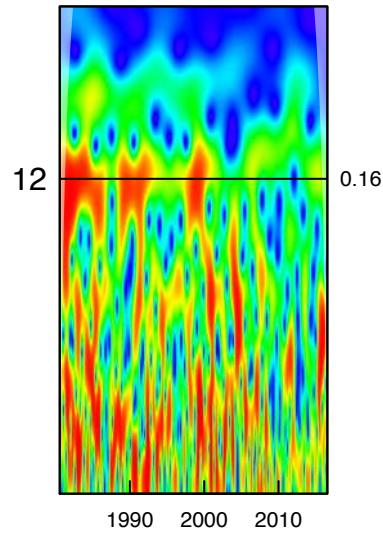
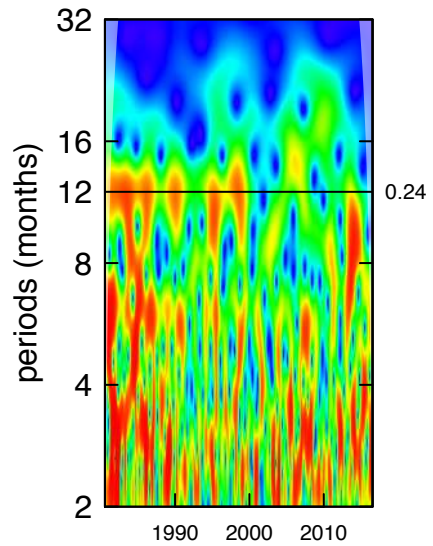
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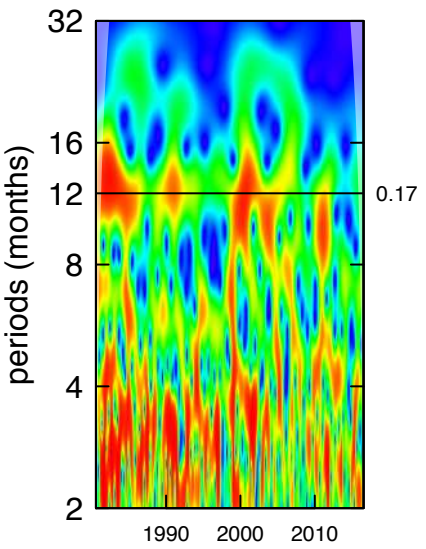
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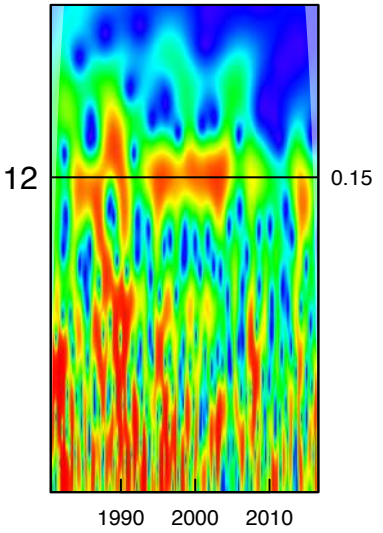


# Male endocrine disorders

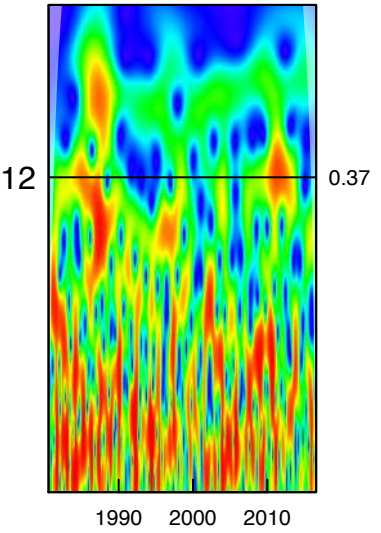
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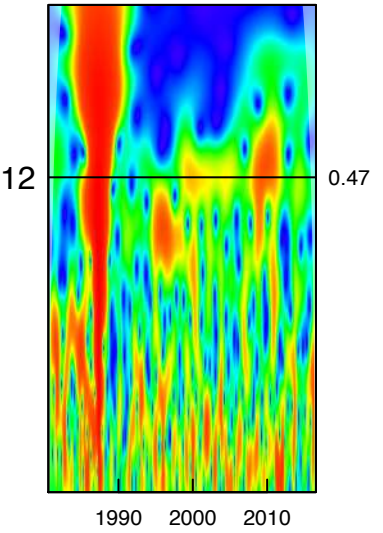
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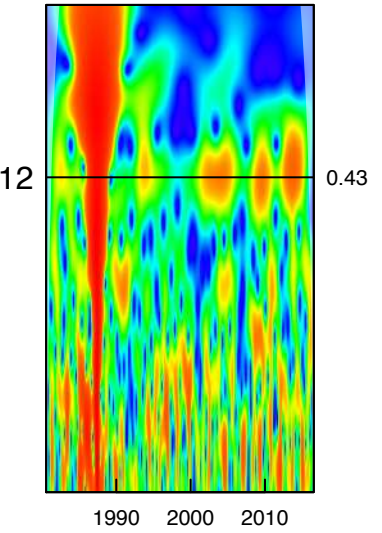
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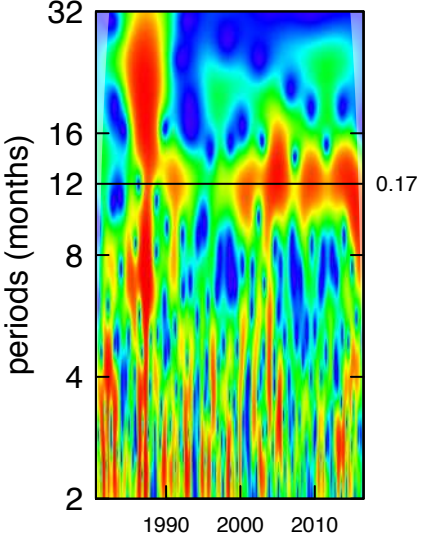
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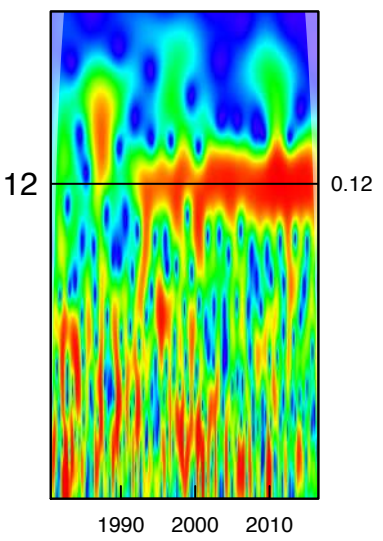
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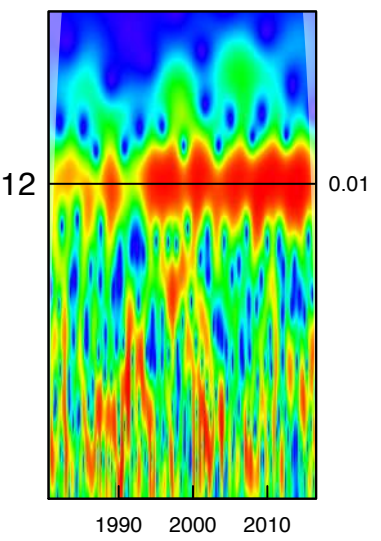
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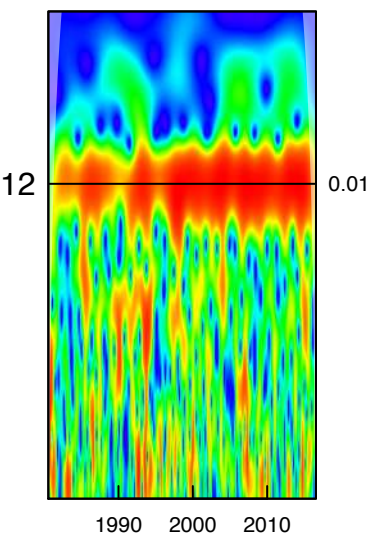
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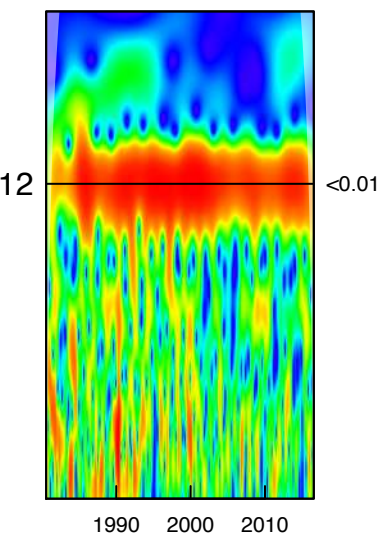
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# Female endocrine disorders

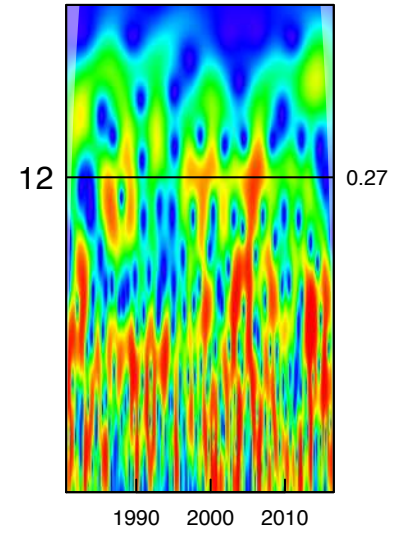
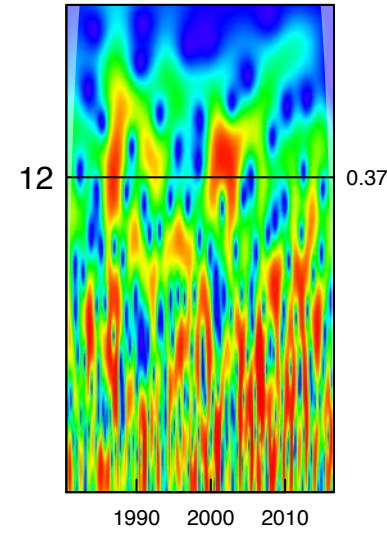
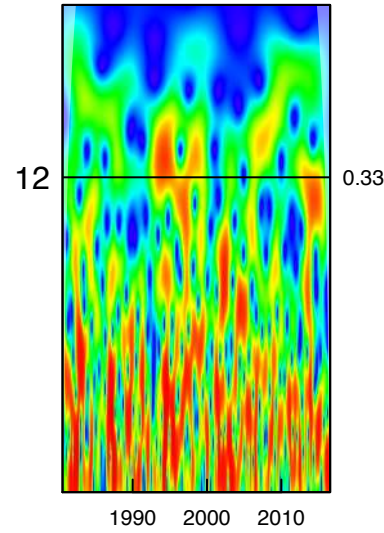
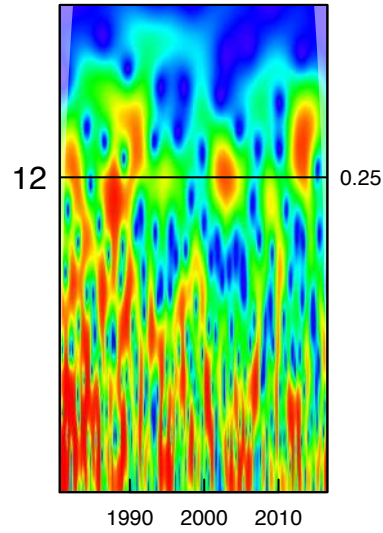
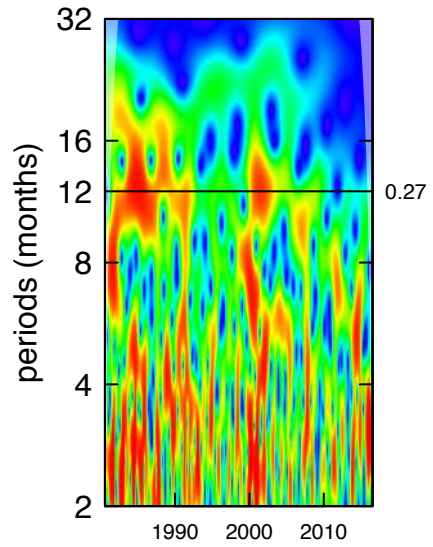
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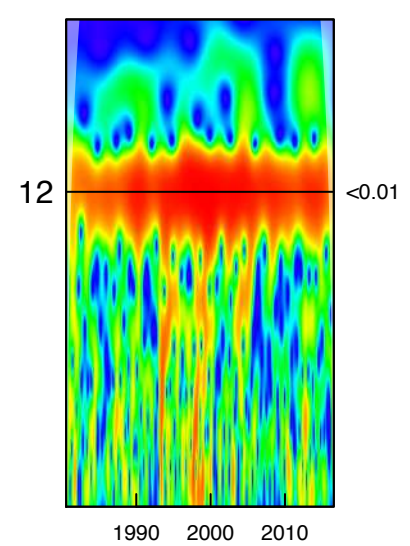
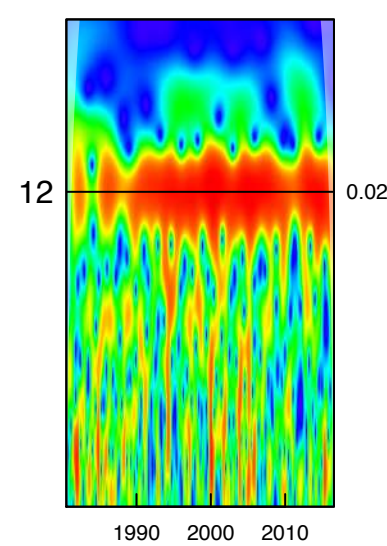
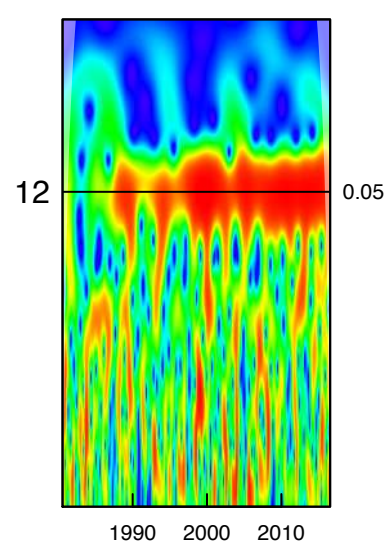
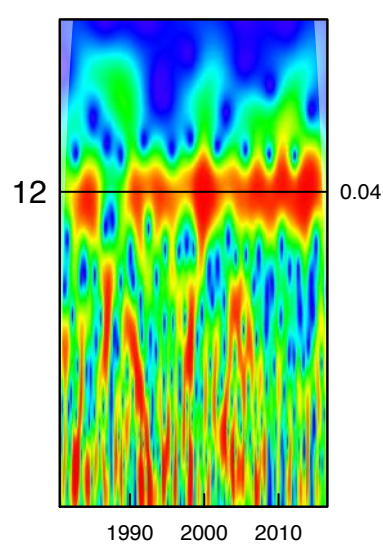
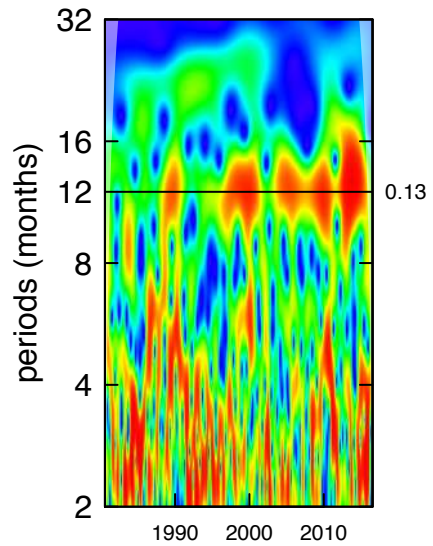
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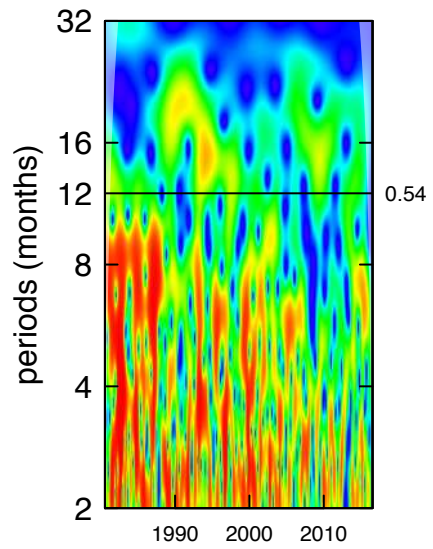
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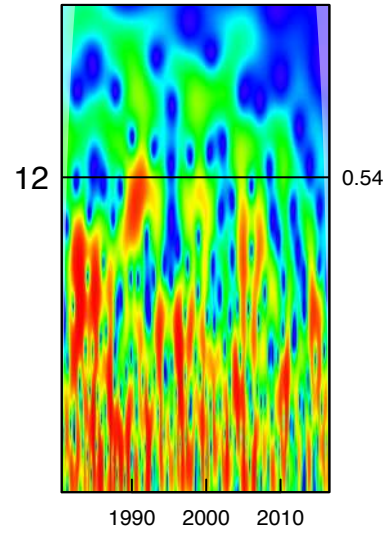


# Male genitourinary diseases

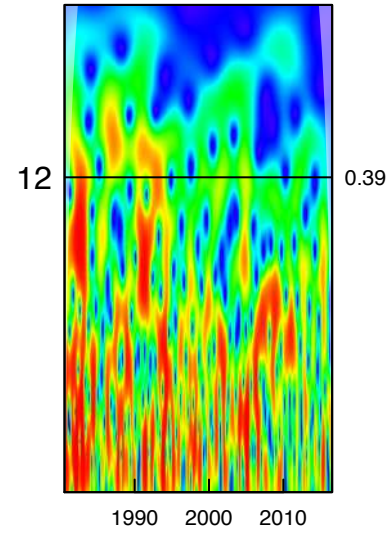
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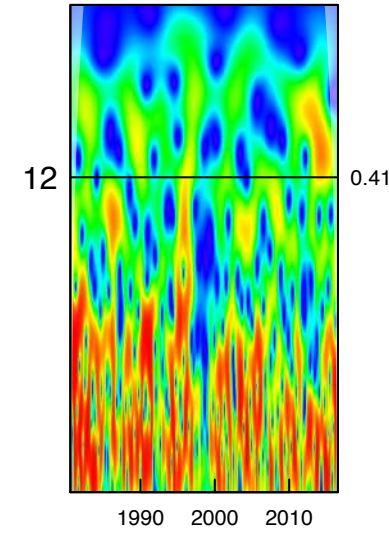
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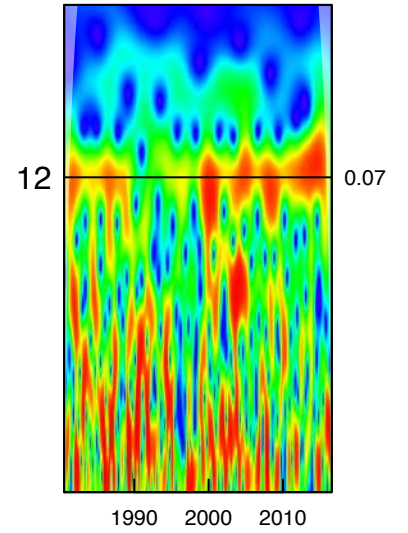
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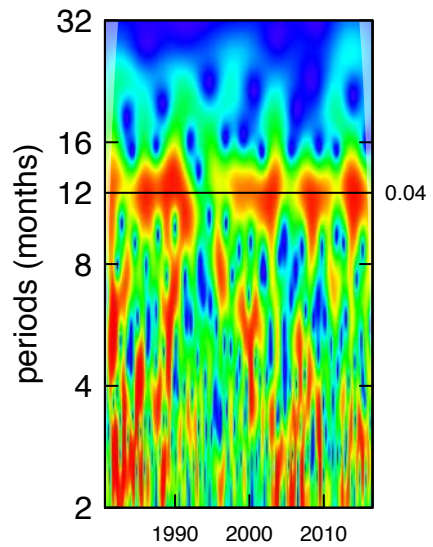
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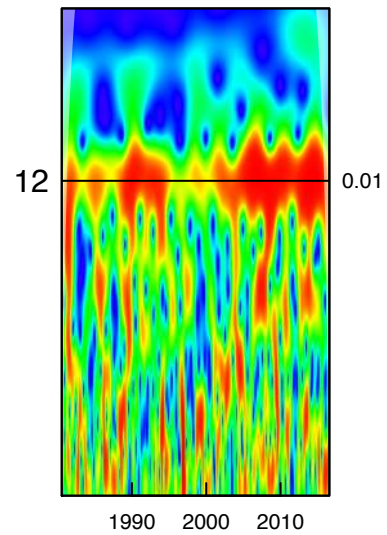
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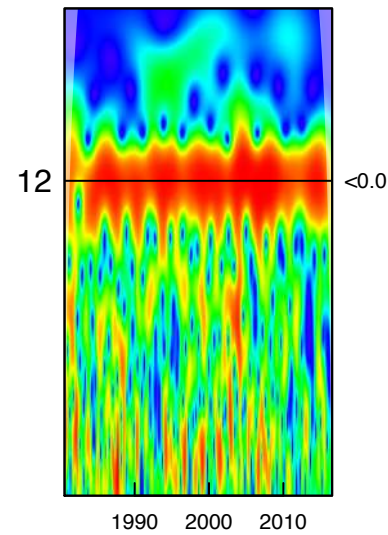
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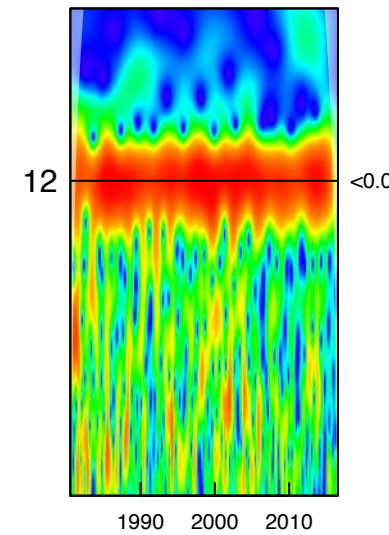
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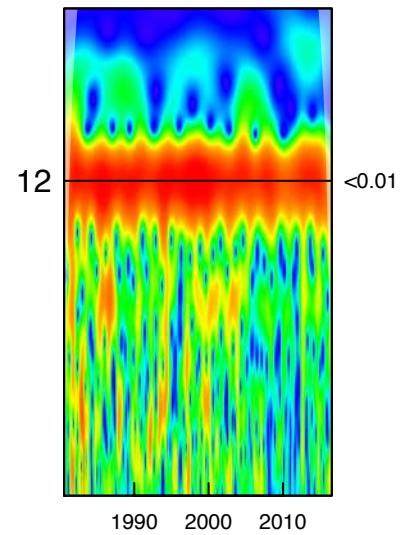
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75-84

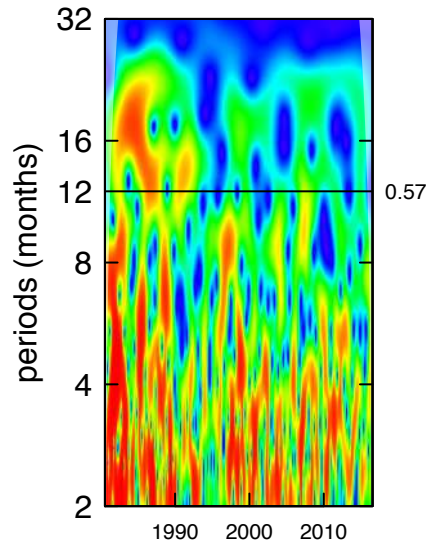


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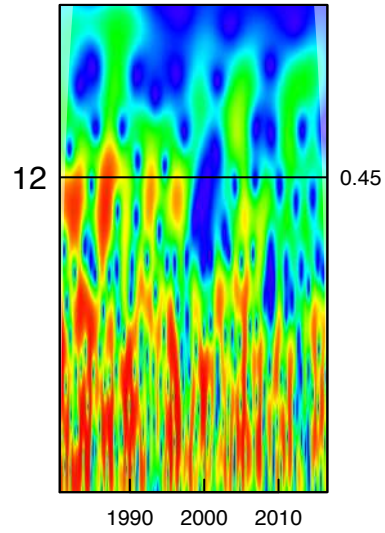


# Female genitourinary diseases

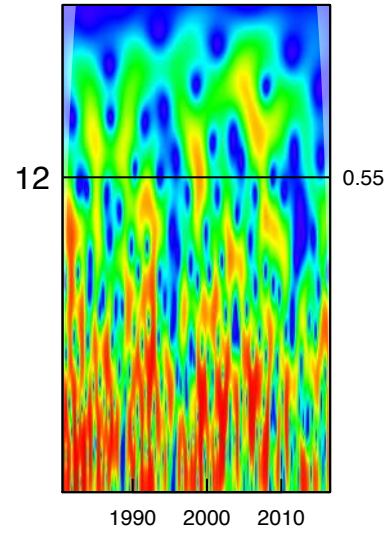
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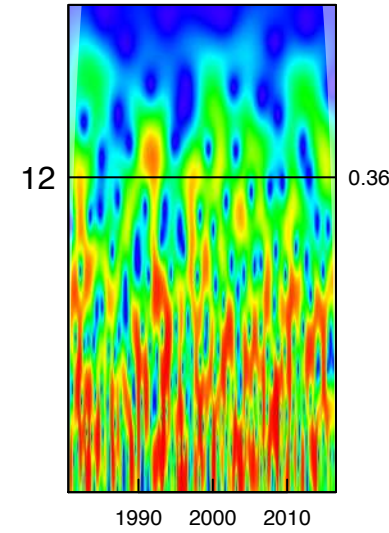
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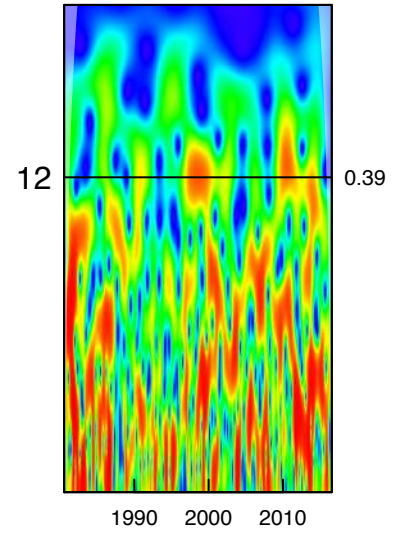
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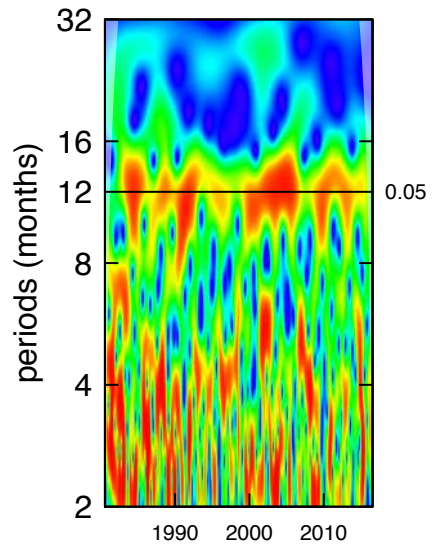
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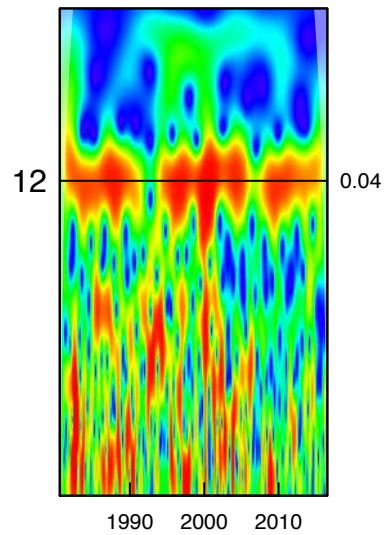
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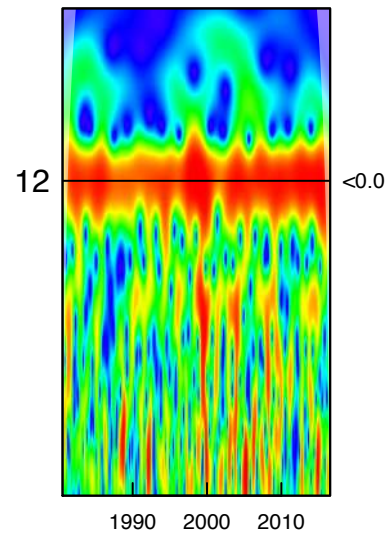
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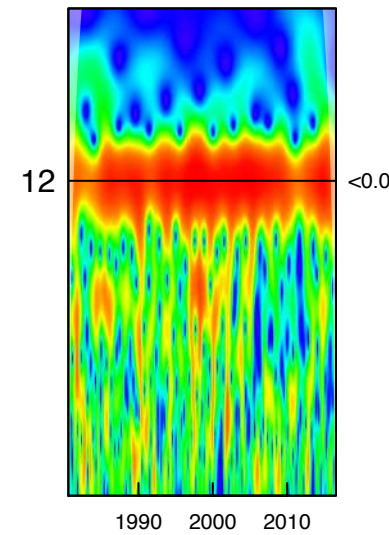
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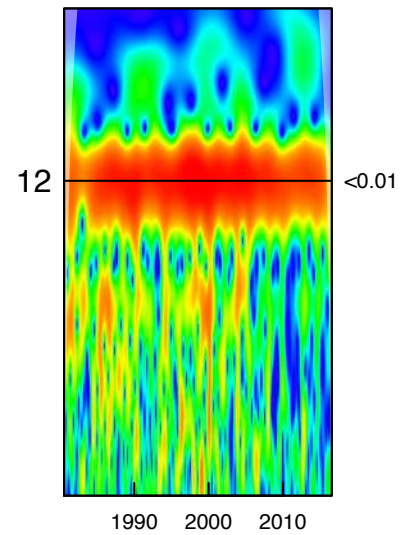
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**75-84**



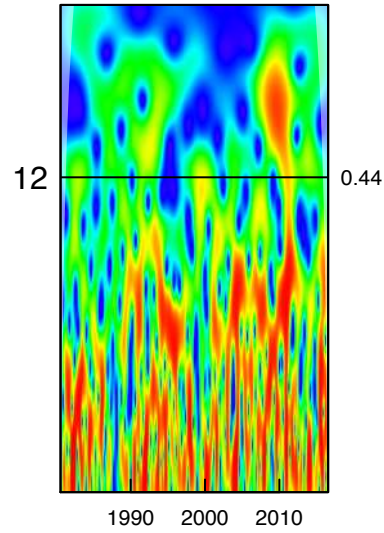
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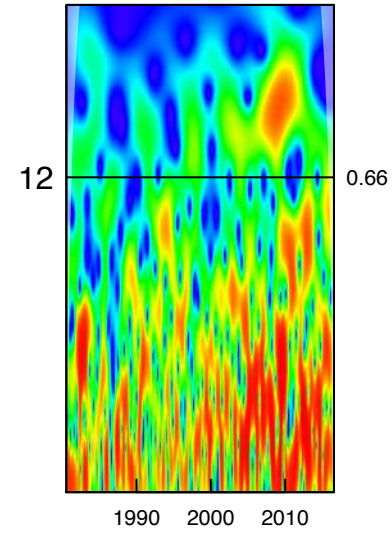


# Female maternal conditions

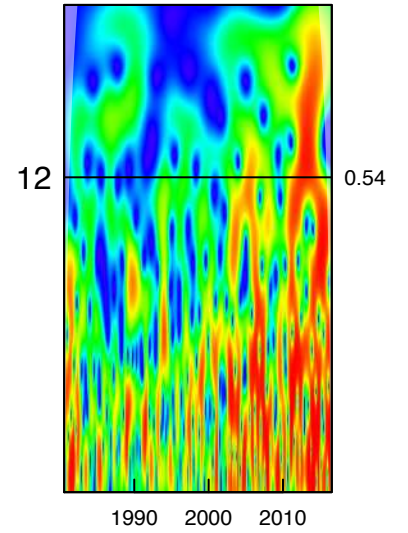
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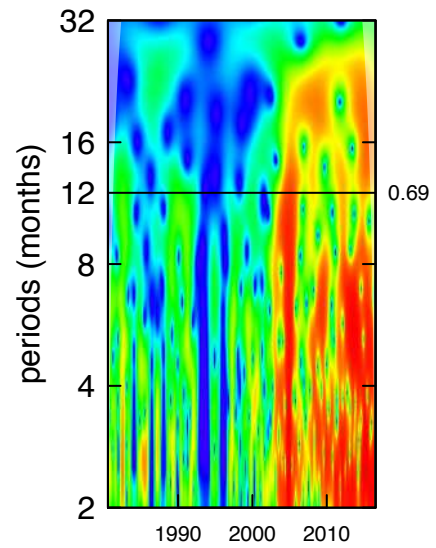
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35–44

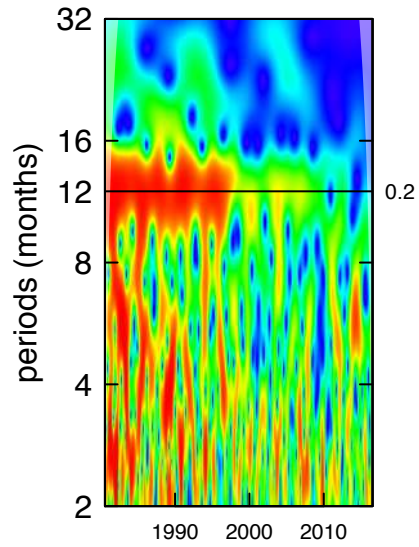


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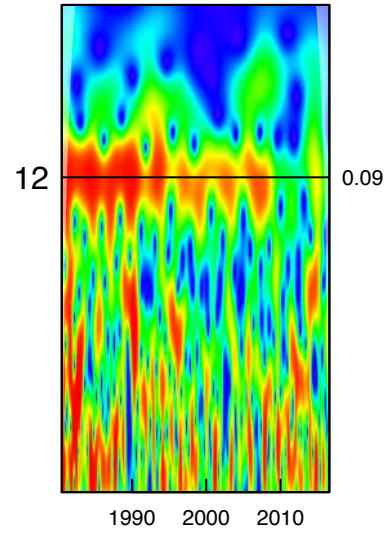


# Male neuropsychiatric disorders

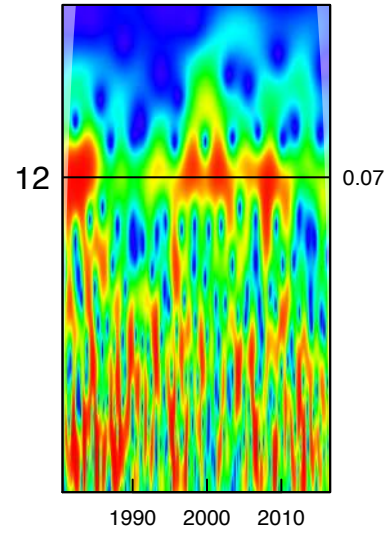
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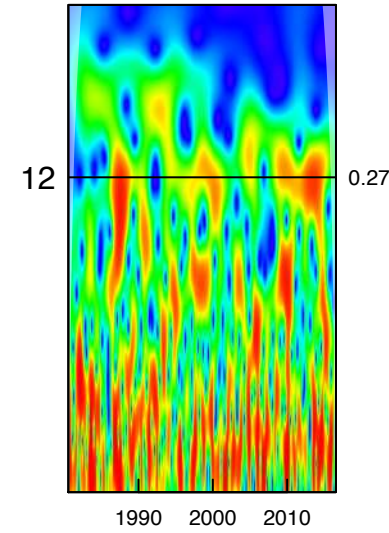
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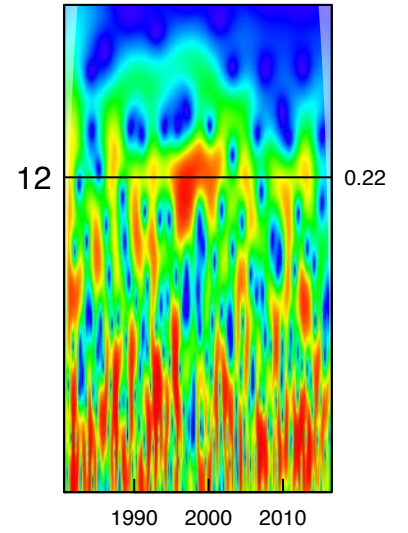
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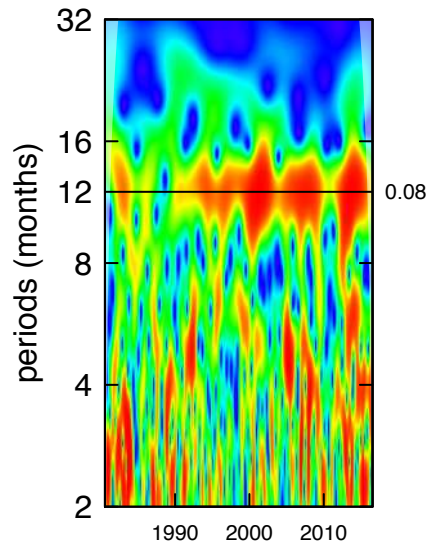
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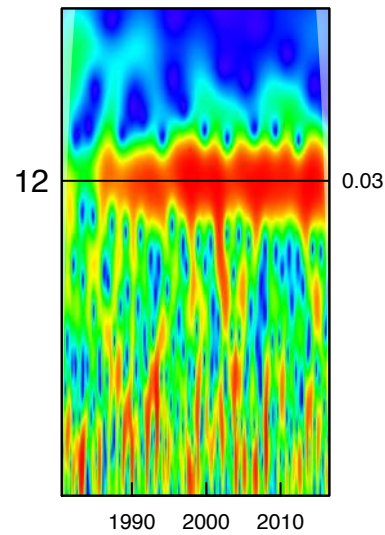
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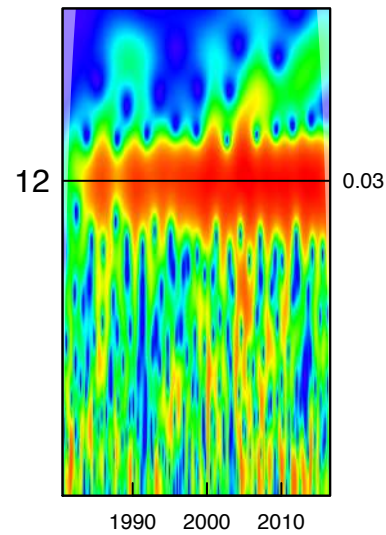
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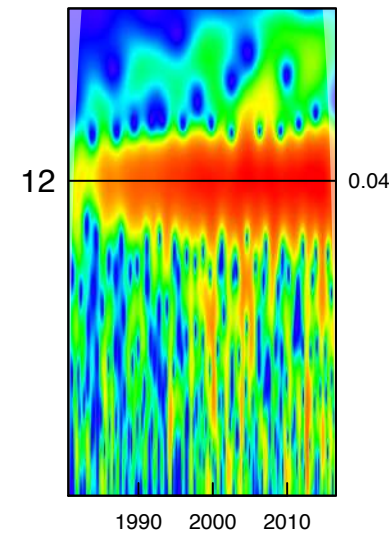
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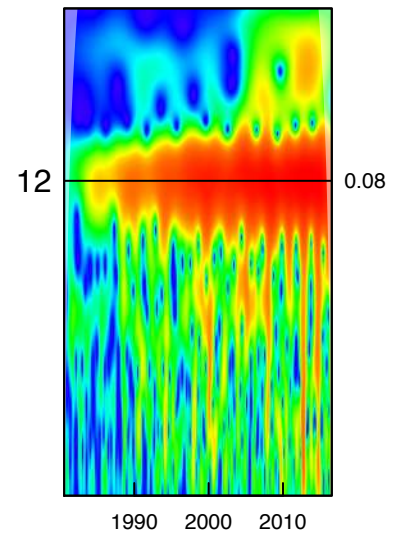
65-74



75-84



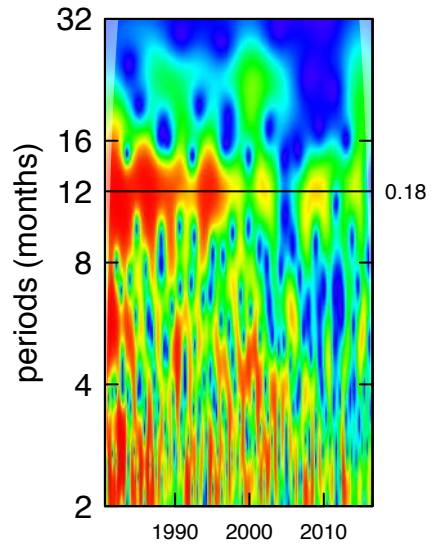
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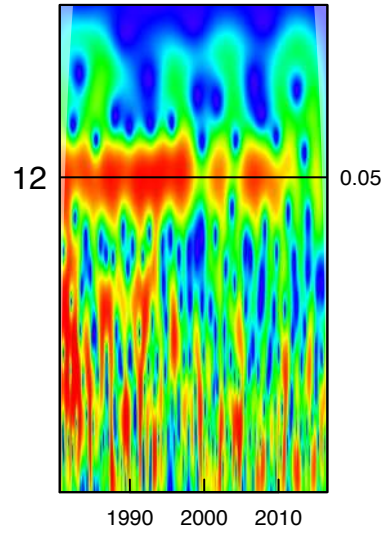


# Female neuropsychiatric disorders

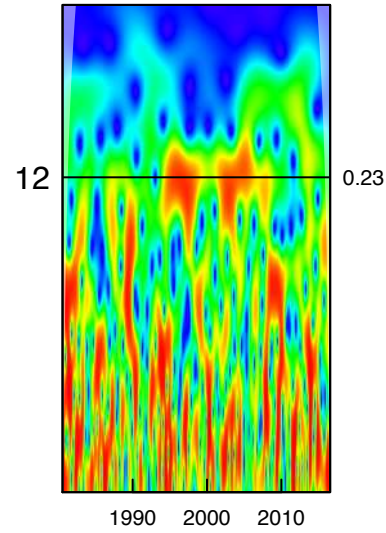
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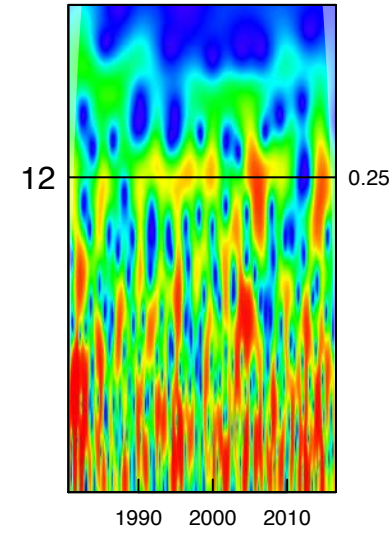
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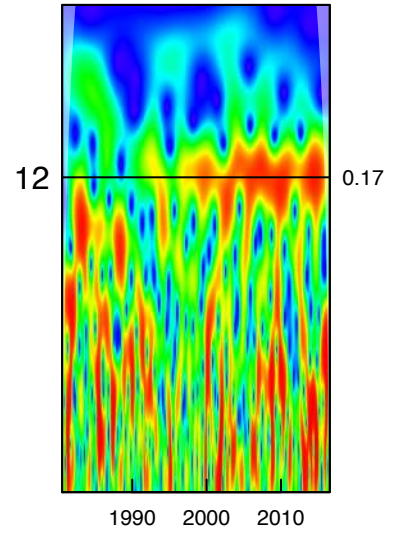
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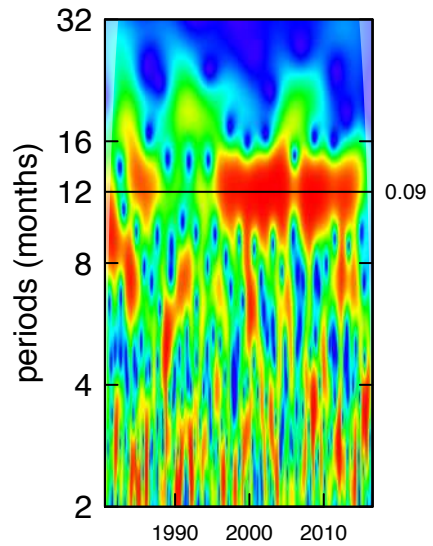
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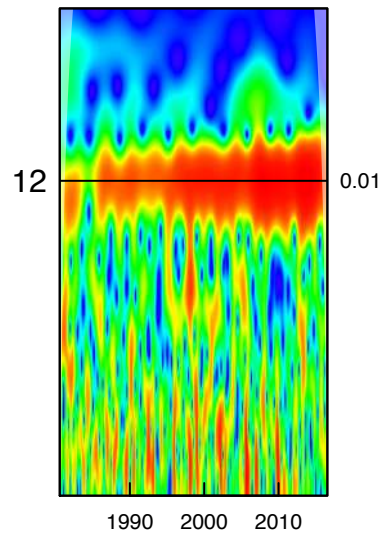
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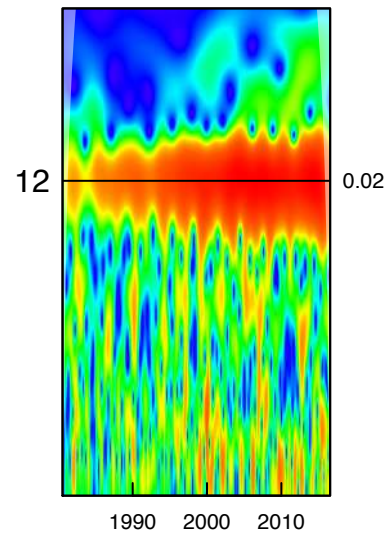
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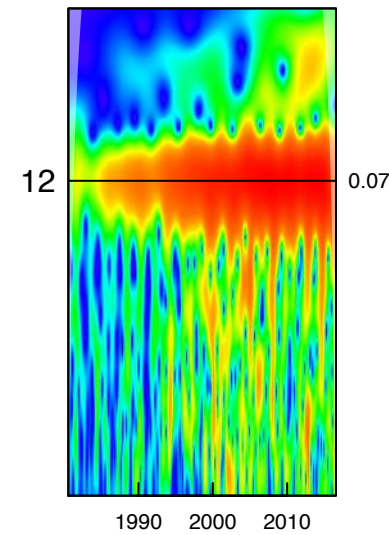
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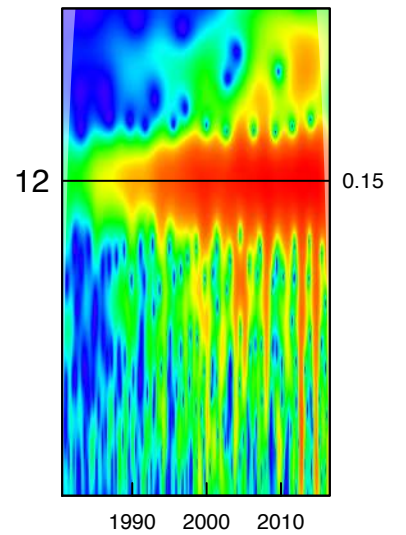
65-74



75-84

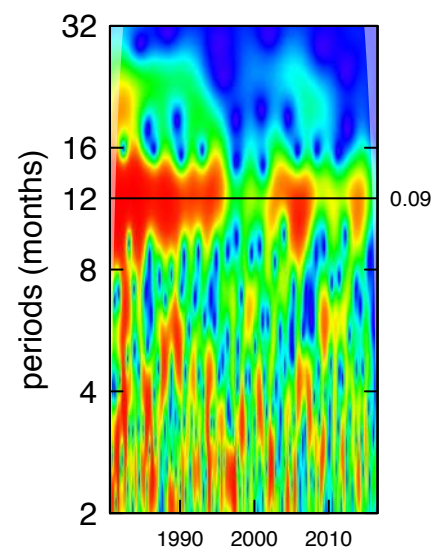


85+



# Male perinatal conditions

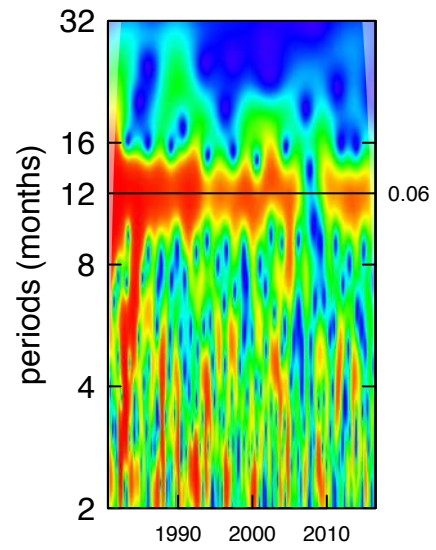
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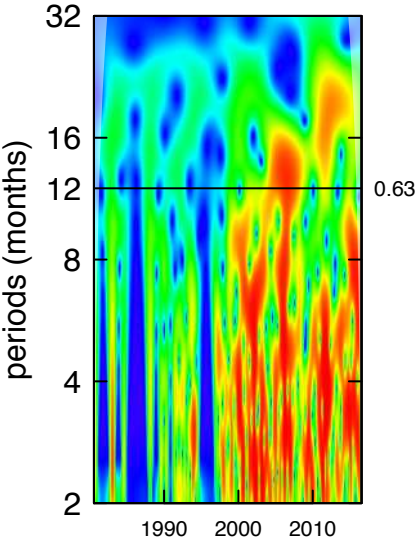
# Female perinatal conditions

0-4

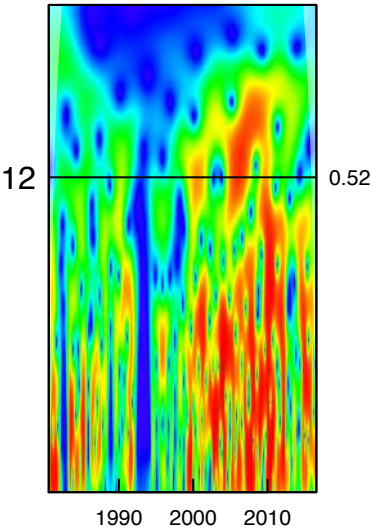


# Male substance use disorders

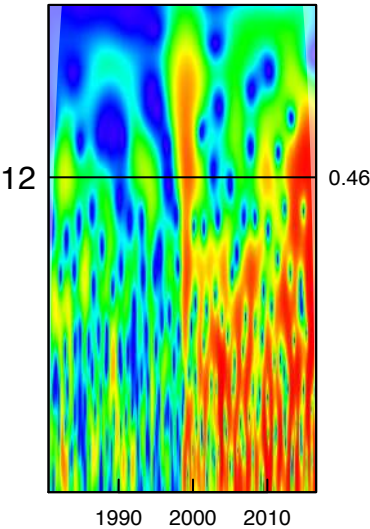
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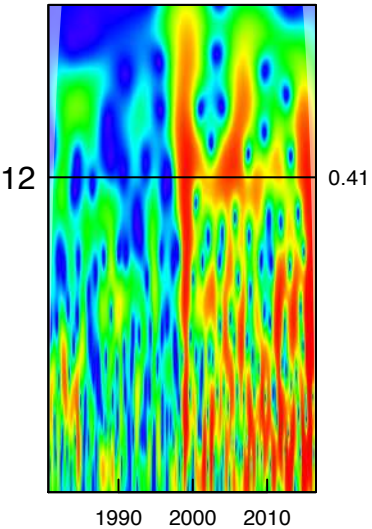
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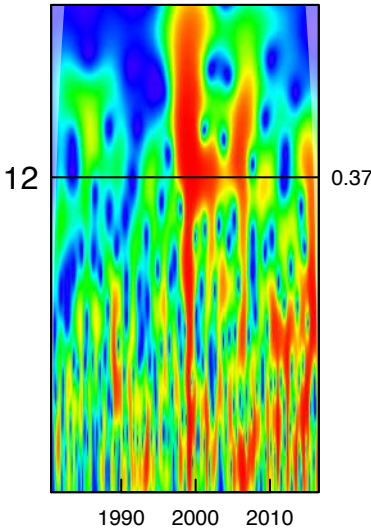
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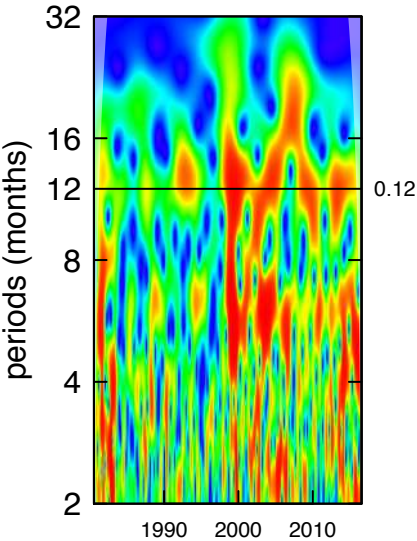
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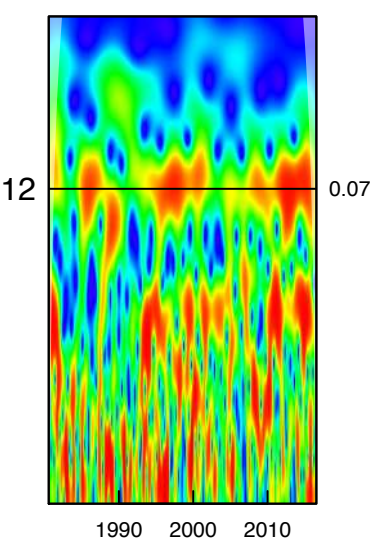
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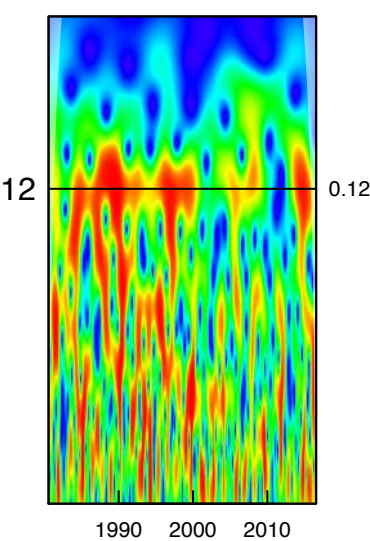
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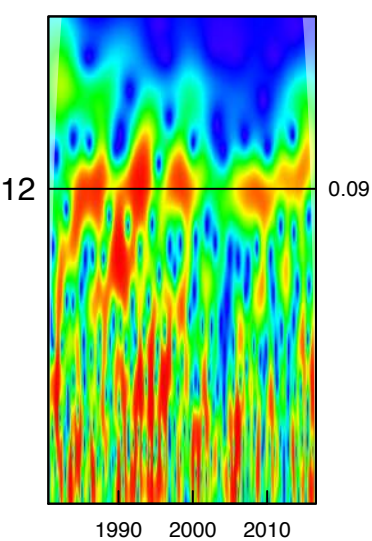
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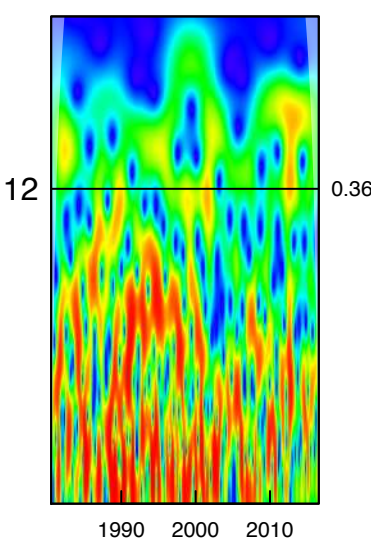
65-74



75-84



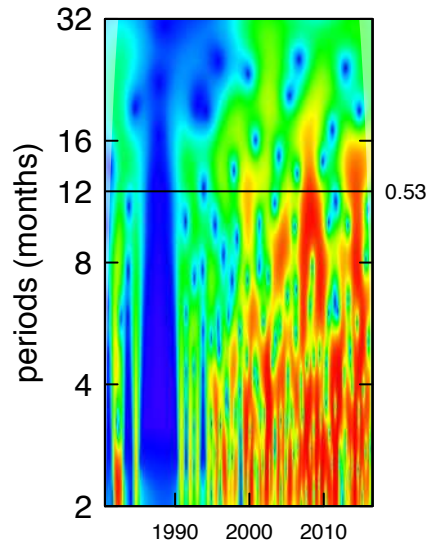
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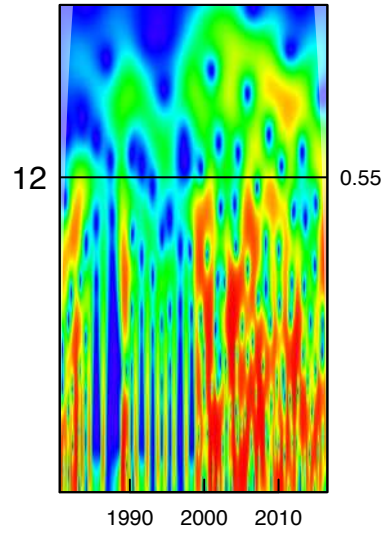


# Female substance use disorders

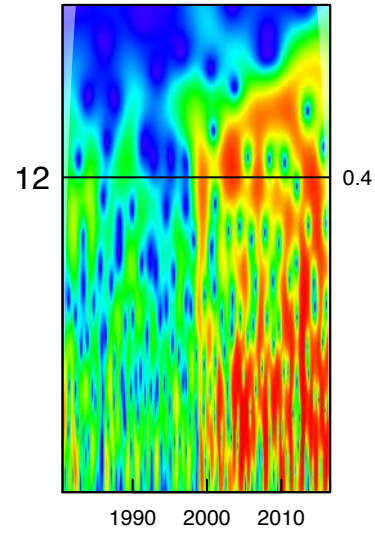
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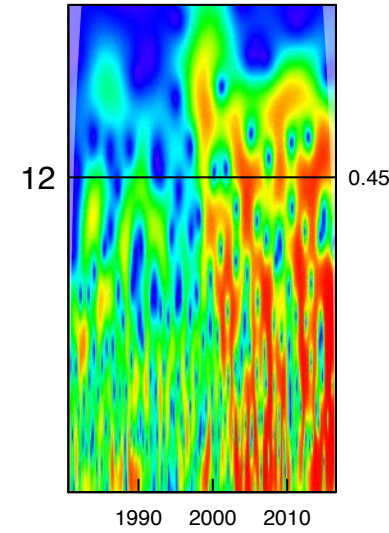
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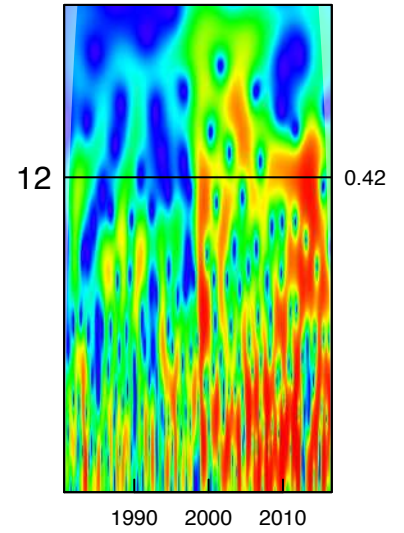
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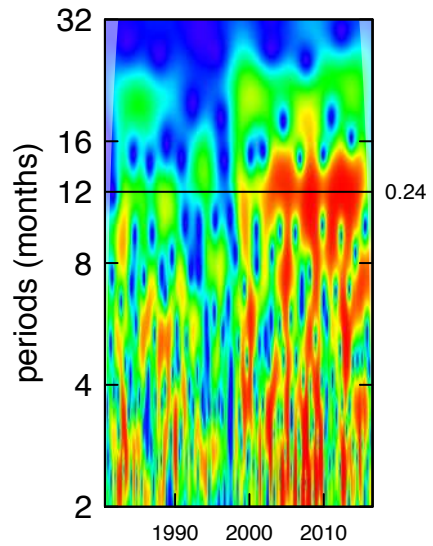
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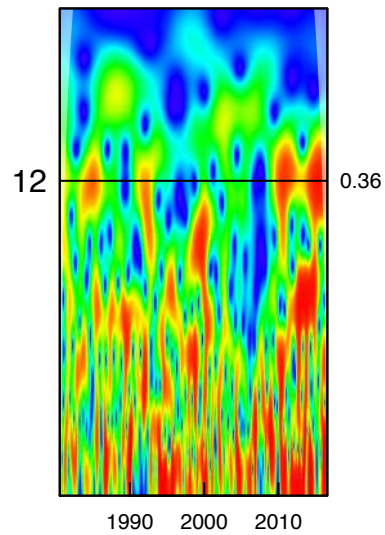
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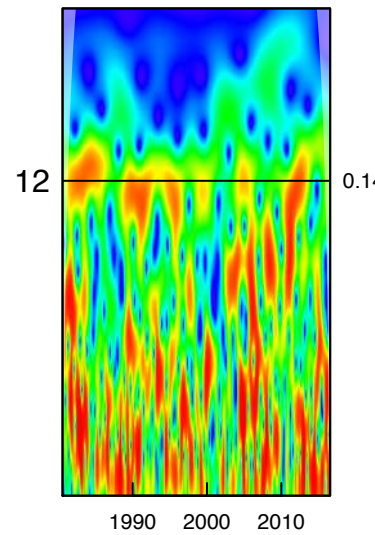
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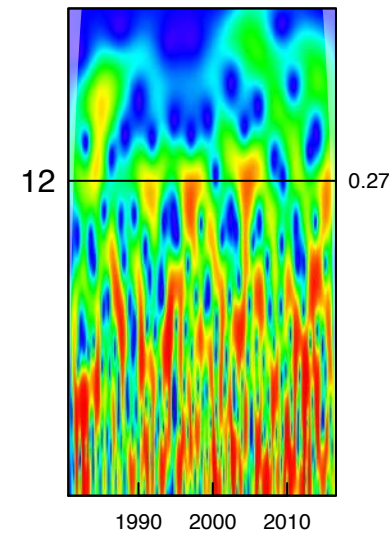
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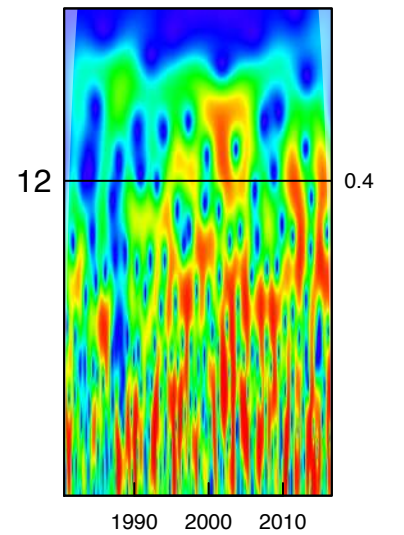
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75-84

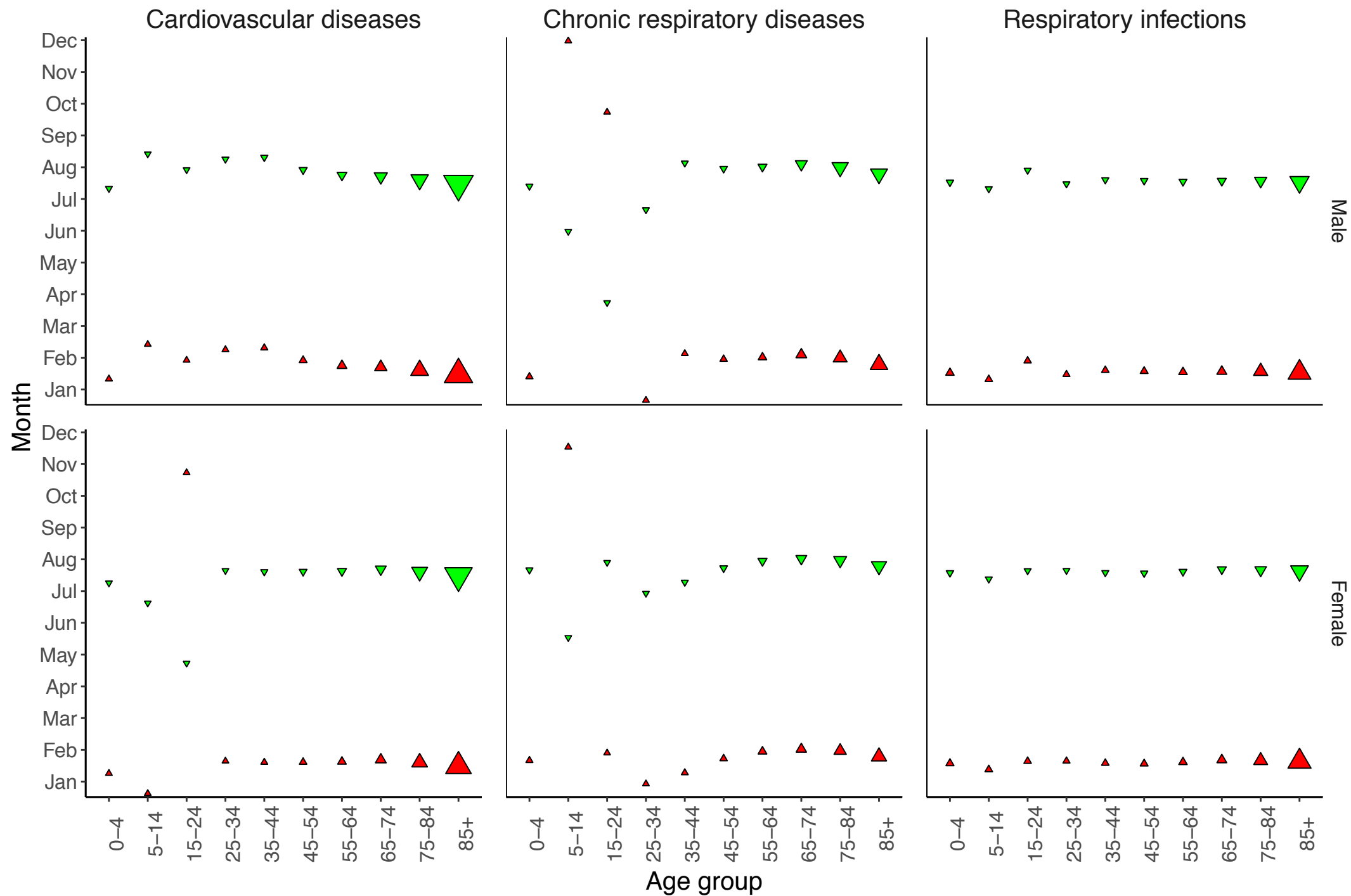


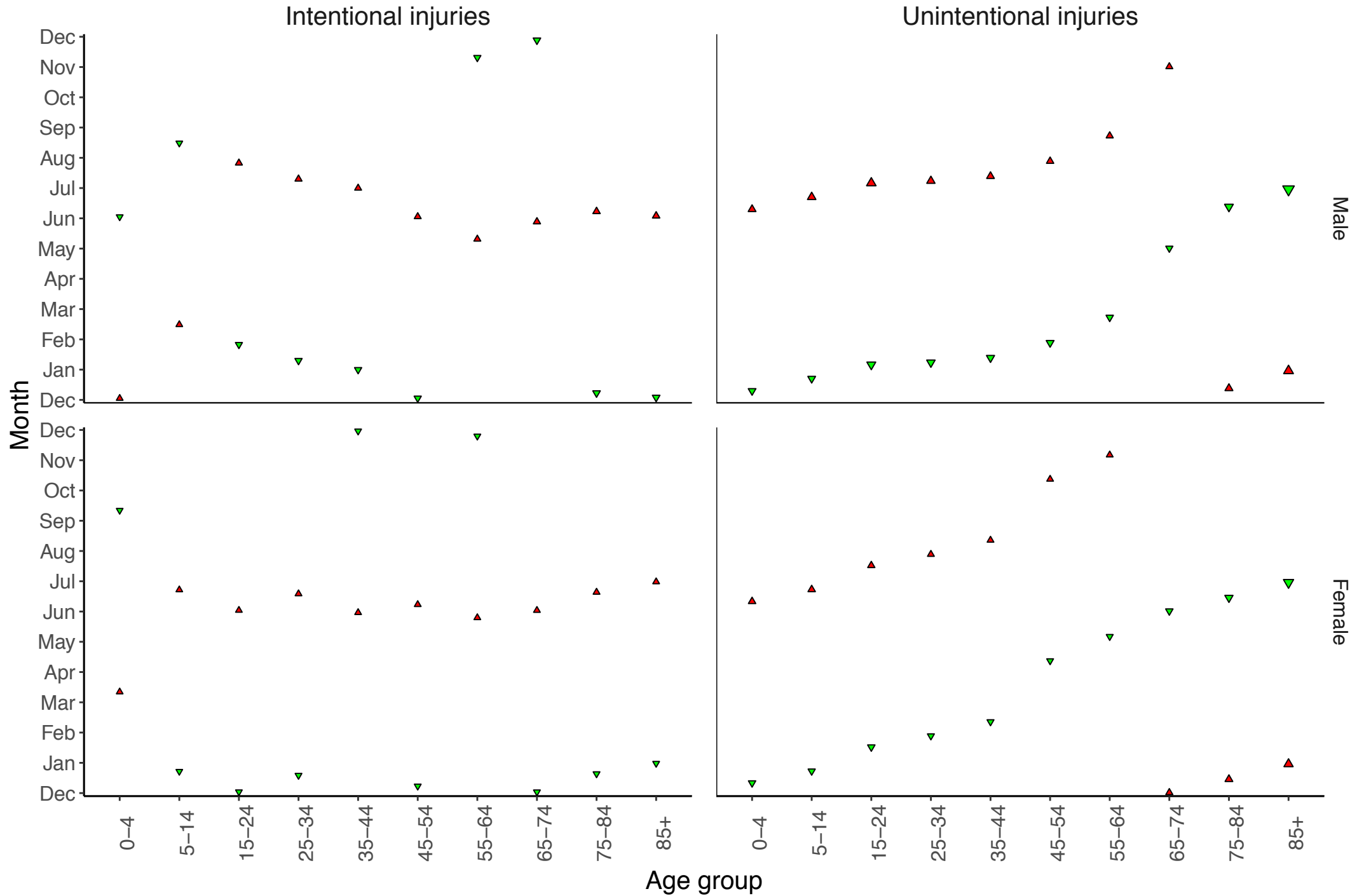
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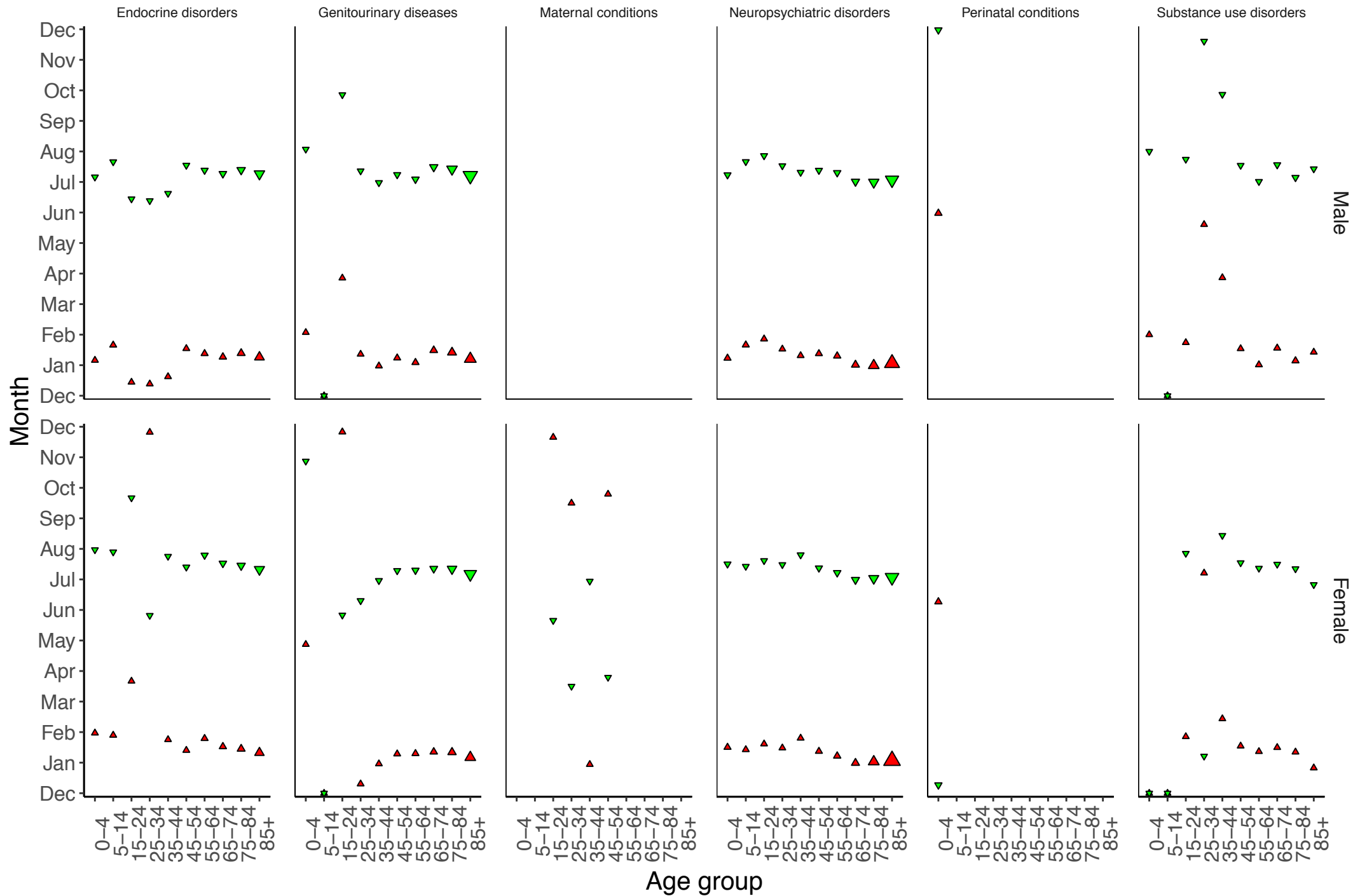
21 **Supplementary Figure 2:** Mean timing of maximum and minimum cause-specific mortality at the  
22 national level for additional causes of death, by sex and age group for 1980-2016. Red arrows indicate  
23 the month of maximum mortality, and green arrows that of minimum mortality. The size of the arrow  
24 is inversely proportional to its respective variance.











25 **Supplementary Figure 3:** National percent difference in death rates between the maximum and  
26 minimum mortality months for additional causes of death in 2016 versus 1980, by sex and age group.



